

STATE OF KANSAS  
PUBLIC WATER SUPPLY  
ANNUAL COMPLIANCE REPORT  
FOR  
CALENDAR YEAR 2004



JULY 2005

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## **I. KDHE's MISSION STATEMENT**

KDHE's mission is to optimize the promotion and protection of the health of Kansans through efficient and effective public health programs and services and through preservation, protection, and remediation of natural resources of the environment.



## **II. INTRODUCTION**

The **Kansas Department of Health and Environment (KDHE)** is charged with protecting and improving the health and environment of Kansans through the wise stewardship of resources. To achieve this, KDHE's Bureau of Water, Public Water Supply Section is responsible for regulating all public water supply systems in the state and assisting them in providing potable water to the people of Kansas. There are approximately 1,100 public water supply systems in Kansas, consisting of cities, rural water districts, and privately owned systems. These water systems serve small convenience shops up to a city of more than 300,000 persons.

This report is a summary of Kansas water system's compliance with drinking water regulations for calendar year 2004. Included in this report are all violations of the maximum contaminant levels (**MCL**), treatment techniques, and monitoring requirements. This report has been prepared by KDHE to inform the general public of the quality of drinking water in Kansas and to comply with the federal **Safe Drinking Water Act (SDWA)**.

All SDWA data for a state is stored in an automated database called the Safe Drinking Water Information System (SDWIS). This database contains an inventory of PWSs, violation records, and individual analytical results. You can review a public water supply system's specific water data at [www.epa.gov/enviro/html](http://www.epa.gov/enviro/html).

The previous report summarizing Kansas drinking water quality for calendar year 2003 is available at [www.kdhe.state.ks.us](http://www.kdhe.state.ks.us)

## **III. PUBLIC WATER SUPPLY SYSTEMS**

In the State of Kansas, a public water system is defined by **Kansas Statute (K.S.A.) 65-162a** and **Kansas Administrative Regulation (K.A.R.) 28-15a-2** as a *“system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.”* These systems are regulated by KDHE to assure citizens are supplied safe drinking water.

All water systems are required by state regulation (K.A.R. 28-15-18(a)) to be operated and maintained by personnel that are properly trained and certified. Properly trained operators are a critical component in assuring safe drinking water to the public. For this purpose, KDHE administers an operator certification program.

During 2004, there were 1,060 water systems serving water in Kansas. These water systems served approximately 2.6 million Kansas residents in addition to the transient population visiting or traveling through the state. Water systems are classified into two categories: community or non-community water systems. The majority of water systems are community water systems. Community water systems serve a year-round residential population. Non-community water systems serve non-residential populations. Non-community water systems can either be transient or non-transient.

Transient non-community water systems serve different people each day. Non-transient non-community water systems serve the same people each day. Table 1 summarizes the three types of water systems. Table 2 shows the types and numbers of systems in operation during 2004.

**TABLE 1.**

**TYPES OF PUBLIC WATER SUPPLY SYSTEMS**

1. **COMMUNITY** - *Same residential consumers every day.*  
e.g.: towns, mobile home/trailer parks, rural water districts, subdivisions.
2. **TRANSIENT NON-COMMUNITY** - *Different non-residential consumers every day.*  
e.g.: motels, parks, airports, campgrounds, truck-stops.
3. **NON-TRANSIENT NON-COMMUNITY** - *Same non-residential consumers every day.*  
e.g.: schools, day care facilities, industrial or manufacturing facilities

Water systems obtain water from two sources: **groundwater (GW)** or **surface water (SW)**. Some water systems obtain water from both groundwater and surface water sources. (Table 2)

Table 2 and Figure 1 on the following page show the three types of water systems, the number of systems in each type, the number of systems using groundwater, surface water, or a combination of both, and the total population served by each water system type. Water systems that use both surface and groundwater are governed by surface water regulations.

**TABLE 2.**

**SUMMARY OF PUBLIC WATER SUPPLY SYSTEMS IN KANSAS**

TYPE OF WATER SYSTEM	GW	SW	GW/SW	TOTAL (%)	POPULATION
Community Water Systems	532	314	62	908 (85%)	2,574,486
Transient Non-Community Water Systems	95	4	0	99 (10%)	4,143
Non-transient Non-Community Water Systems	53	0	0	53 (5%)	19,594
<b>TOTAL</b>	680	318	62	1060 (100%)	2,598,223

The following four figures show the types, sources and population served by the different sources of water.

**FIGURE 1.**

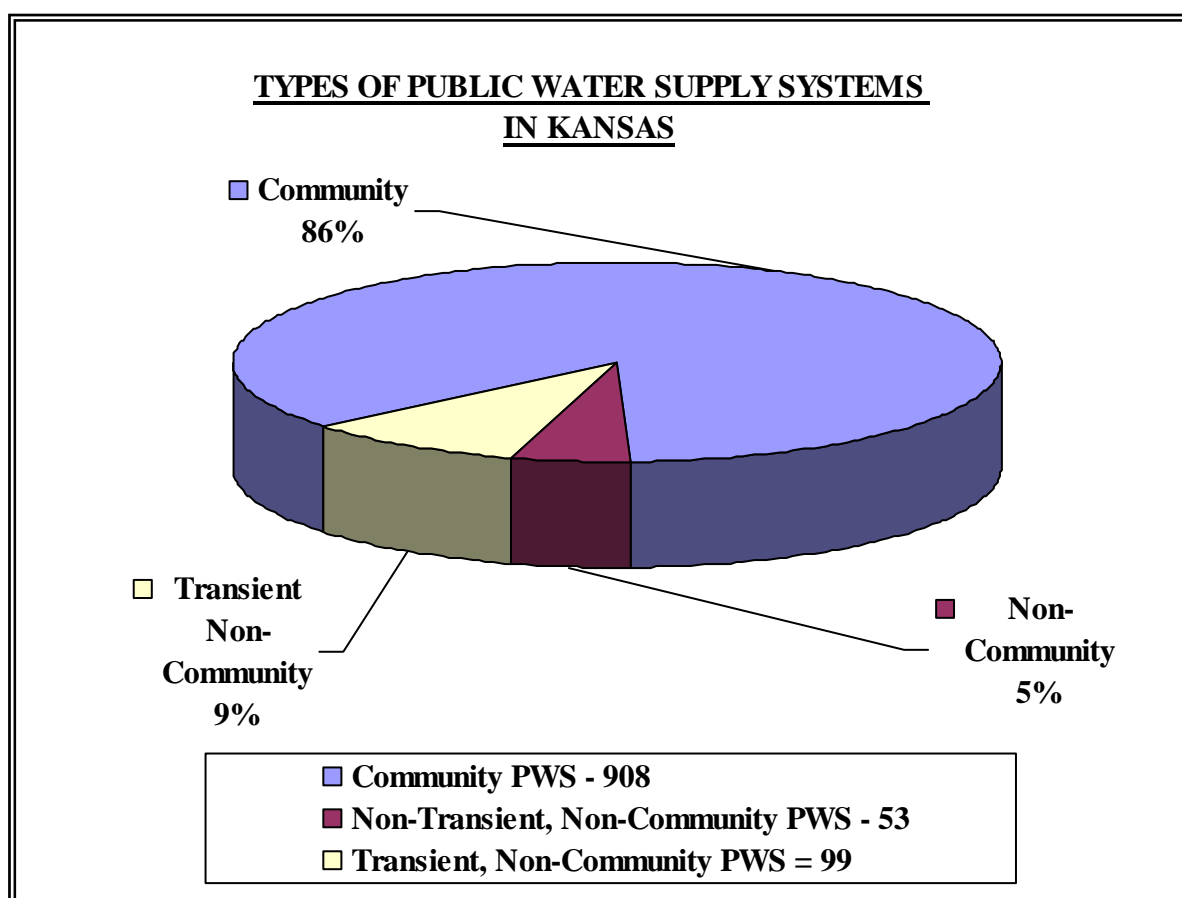




Figure 2 shows the number and percentages of community public water supply systems, according to the population served. Fifty-two percent of the systems serve a population of less than 500.

**FIGURE 2.**

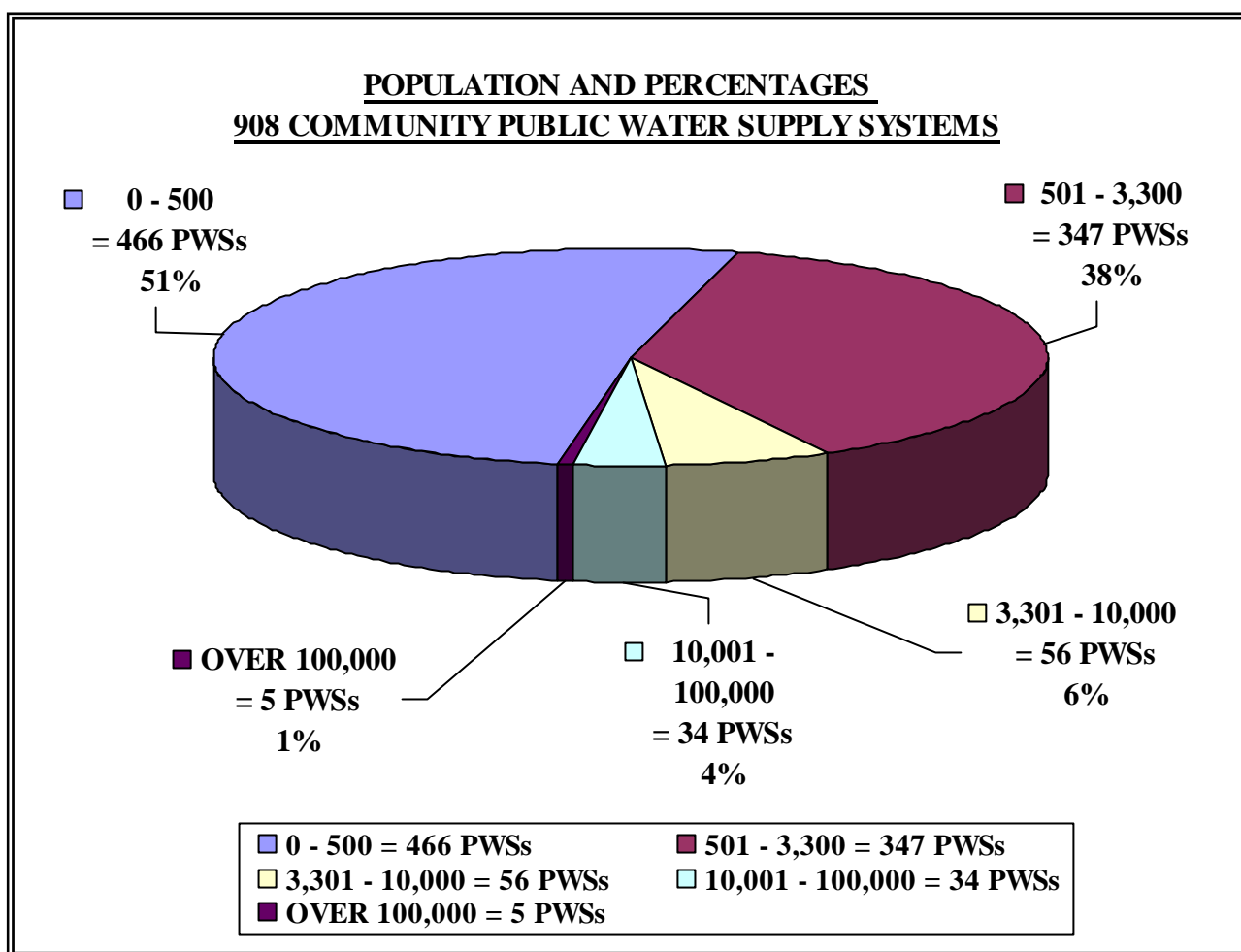


Figure 3 shows the numbers and percentages of systems using groundwater, surface water, or a combination of both. Included in these figures are 308 systems which purchase 100 percent of their drinking water from another public water supply system.

**FIGURE 3.**

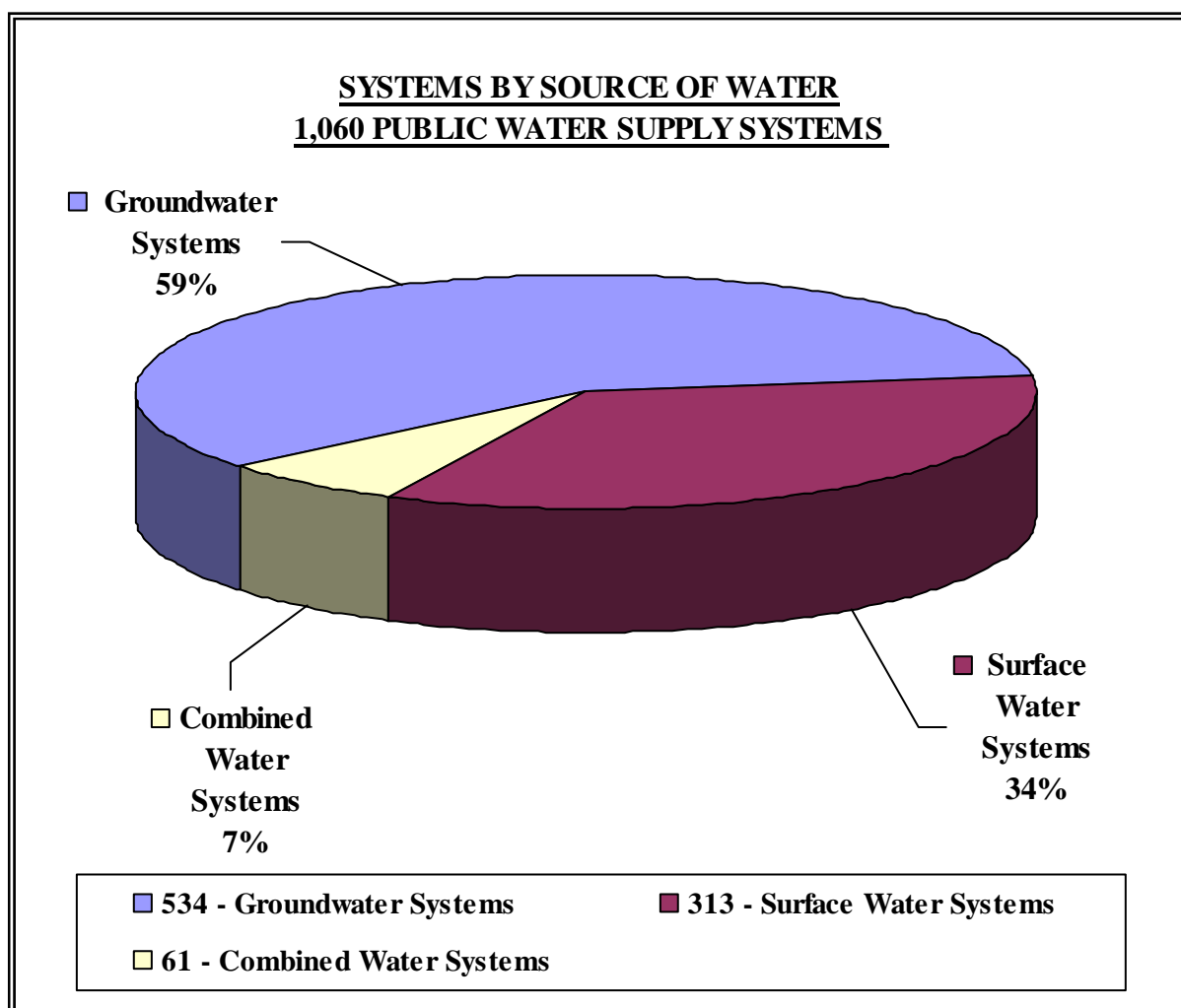
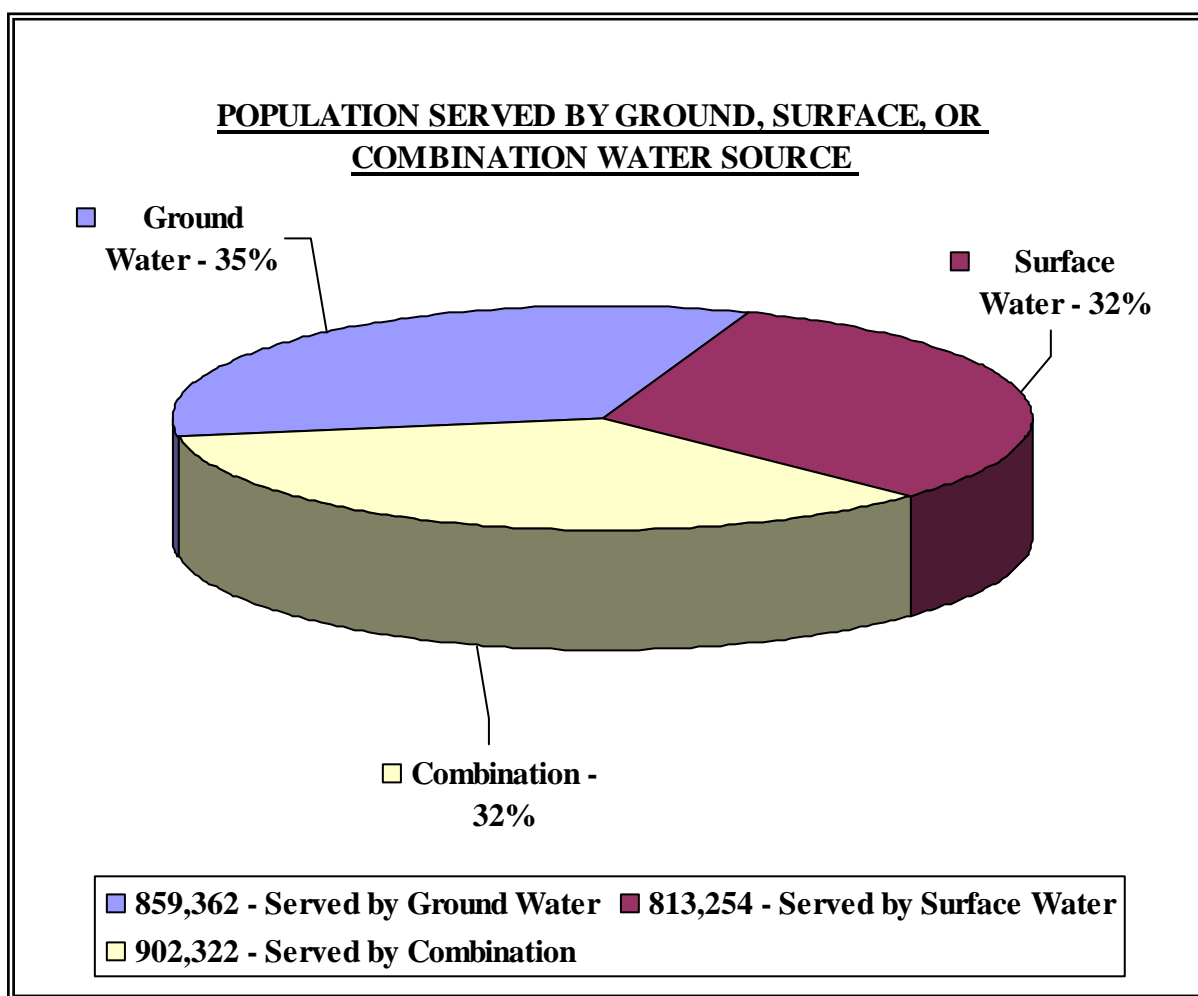


Figure 4 shows the resident population for all water systems served by groundwater, surface water, or a combination of both sources. These numbers include 308 water systems purchasing surface or groundwater from other water systems.

**FIGURE 4.**



#### **IV. REGULATORY PROGRAMS**

To help ensure good drinking water quality, several regulatory programs have been developed and implemented by KDHE. These programs monitor water quality in several different areas, ranging from microbiological organisms to inorganic and organic chemicals and radionuclides.

Kansas regulations establish maximum permissible levels for certain drinking water contaminants. These levels are known as **maximum contaminant levels (MCLs)**. In some situations, regulations also require application of minimum water **treatment techniques (TT)**.

To verify compliance with the MCLs and treatment techniques, regulations require water systems to regularly monitor and report their water quality parameters to KDHE. These requirements help to assure that all water systems provide safe drinking water for human consumption.

#### **COMPLIANCE AND ENFORCEMENT**

One of KDHE's objectives is to assist water systems in complying with all state and federal drinking water regulations. KDHE staff are available to assist water systems with regulatory concerns and technical questions, and will refer the systems to third party technical assistance providers as appropriate.

The department first uses technical assistance rather than formal enforcement action to return water systems to compliance. When necessary, enforcement action is administered according to an escalation policy. The first step is to notify the water system by mail that a violation occurred. If three violations occur within any twelve month period, a Directive is sent to the water system. If violations continue then either a Consent Order or an Administrative Order, with or without a civil penalty, could be issued.

KDHE **has not** issued any variances or exemptions from the SDWA requirements to any water system and has not received any request for variances or exemptions from any water system. All water systems are expected to comply with all drinking water regulations and to perform public notice if violations occur.

"Boil water" advisories are issued to assure the public is not placed at undue risk from exposure to potentially harmful microorganisms as a consequence of consumption of drinking water from a public water system which is known to be, or suspected to be, contaminated. The most common reason for issuance of a boil water advisory is a loss of pressure in the distribution system. The public water system and/or KDHE will notify area media when the boil water advisory has been rescinded. 16 boil water advisories were issued either by the public water system or by KDHE during 2004. The names of systems that incurred a boil water advisory are listed in Appendix B.

Water systems that have recurring monitoring and/or MCL violations are subject to having an administrative order (with or without penalty) issued by KDHE. Before an administrative order is issued, KDHE first issues a Directive in an effort to get the public water supply to correct the violation.

A summary of formal enforcement actions during 2004 is presented in Table 3.

**TABLE 3.**

**DIRECTIVES**

<b>SYSTEM NAME</b>	<b>EPA #</b>	<b>ISSUED DATE</b>	<b>VIOLATION(S)</b>
ELLSWORTH CO. RWD #1	KS2005309	06/30/2004	SWTR reporting & EO plan. Fulfilled compliance schedule 12/31/2004.
EMMETT	KS2014901	03/24/2004	Bact Monitoring. Fulfilled compliance schedule 04/26/2004.
HAMILTON	KS2007303	07/06/2004	Bact Monitoring. Fulfilled compliance schedule 09/30/3004.
LANE	KS2005901	03/05/2004	SWTR. Fulfilled compliance schedule 05/20/2004.

**CONSENT ORDERS**

<b>SYSTEM NAME</b>	<b>EPA #</b>	<b>ISSUED DATE</b>	<b>VIOLATION(S)</b>	<b>CASE #</b>
NORWICH	KS2009505	04/29/2004	Nitrate MCL	04-E-0086

**CONSENT AGREEMENTS\***

<b>SYSTEM NAME</b>	<b>EPA #</b>	<b>ISSUED DATE</b>	<b>VIOLATION(S)</b>	<b>CASE #</b>
STAGG HILL GOLF CLUB	KS2116114	12/23/2004	Bact, Nitrate Mon.,PN	04-E-0172
TYSON FRESH MEATS	KS2105525	12/06/2004	Nitrate	04-E-0051

\*A Consent Agreement is an action taken as a result of an appeals hearing in which KDHE and a public water supply system mutually agree to terms to be completed within a specific time frame in lieu of being forced to comply as ordered. A Consent Agreement may reduce a penalty or allow more time for a system to return to compliance if an agreement can be reached between all parties involved.

**ADMINISTRATIVE ORDERS**

SYSTEM NAME	EPA #	ISSUED DATE	VIOLATION(S)	CASE #
TYSON FRESH MEATS	KS2105525	03/15/2004	Nitrate	04-E-0051

**ADMINISTRATIVE ORDERS WITH PENALTY**

SYSTEM NAME	EPA #	ISSUED DATE	VIOLATION(S)	CASE#
SANDBOX DAYCARE	KS2117336	10/21/2004	Bact, Cl, Operator, PN	04-E-0170
STAGG HILL GOLF CLUB	KS2116114	11/04/2004	Bact, Nitrate Mon., PN	04-E-0172
TACO LOCO	KS2105535	09/24/2004	Certified Operator	04-E-0123
THAYER	KS2013312	12/27/2004	Pb/Cu monitoring	04-E-0196
WALLACE CO. RWD #1	KS2019901	03/10/2004	Bact, Nitrate Mon., PN	04-E-0020

Current regulations administered by KDHE address the following areas of drinking water contaminants:

- **TOTAL COLIFORM BACTERIA**
- **PHASE II/V CHEMICALS**
- **LEAD AND COPPER**
- **DISINFECTION BY-PRODUCTS**
- **SURFACE WATER TREATMENT**
- **RADIONUCLIDES**

## **V. TOTAL COLIFORM BACTERIA**

Water has the potential to affect public health since it can be a medium for transmitting diseases. For this reason, methods of disinfecting water have been developed. The most common method used today for disinfecting water is chlorination. Chlorination of drinking water has been practiced since the early 1900s.

Total coliforms are common in the environment and are generally not harmful themselves. Fecal coliforms and *E. coli* are generally not harmful but their presence in drinking water is serious because they usually are associated with sewage or animal waste. The presence of these bacteria in drinking water generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease (pathogens).

In Kansas, water systems are required by state regulation K.A.R. 28-15-19(a) to disinfect all drinking water delivered to the public. To help evaluate the effectiveness of the disinfection method and determine microbiological quality, all systems are required by state regulation K.A.R. 28-15a-21 to submit monthly water samples for coliform bacteria testing. Total coliform testing is used as an indicator of the possible presence of other bacteriological contaminants. Systems can choose to have this bacteriological testing of their water performed by KDHE's microbiology laboratory or a state certified private laboratory.

A summary of the results of approximately 36,729 water samples collected and analyzed for coliform bacteria in the state laboratory during 2004 is presented in Table 4.

**TABLE 4.**

### **SUMMARY OF BACTERIOLOGICAL MONITORING RESULTS -2004**

<b>QUARTER COLLECTED</b>	<b>NEGATIVE SAMPLES</b>	<b>COLIFORM POSITIVE</b>	<b>FECAL POSITIVE</b>	<b>INVALID SAMPLES</b>	<b>QUARTERLY TOTALS</b>
First Quarter Samples:	8789	26	5	189	9,009
Second Quarter Samples:	8789	77	12	254	9,132
Third Quarter Samples:	8892	78	18	318	9,306
Fourth Quarter Samples:	8625	63	10	584	9,282
Total Samples for 2004:	35095	244	45	1345	9,282

Key: QUARTER = Three month period; four quarterly periods in one year.

NEGATIVE = Samples with no coliform bacteria present.

COLIFORM POSITIVE= Samples with coliform bacteria present. (does not include fecal coliform)

FECAL POSITIVE= Samples with fecal coliform bacteria present.

INVALID = Samples not analyzed (too old, excessive chlorine, insufficient sample volume, empty, lost in mail, excess growth).

## **COMPLIANCE AND ENFORCEMENT**

Water systems that failed to collect one or more required samples within the monthly compliance period were assessed a *routine monitoring violation*. When a water sample tests positive for coliform bacteria, water systems are required to collect three repeat samples (also called check samples). If the water system failed to collect one or more of these repeat (check) samples, the system was then assessed a *repeat monitoring violation*. Monitoring violations result in the system being required to issue public notification.

The system could have incurred a maximum contaminant level (MCL) violation if a number of water samples tested positive for total coliform, or the system could have incurred a more serious acute MCL violation if fecal coliform or E. coli were found in one or more of the total coliform positive samples. In both cases, the systems are required to notify the public of the violations by publication, direct mail, and/or hand delivery. For acute MCL violations, systems are required to provide notices to radio and television stations and contact KDHE within 24 hours of learning of the violation.

A summary of all monitoring and MCL violations during 2004 is presented in Table 5.

**TABLE 5.**

### **SUMMARY OF MONITORING VIOLATIONS AND COLIFORM MCL VIOLATIONS IN 2004**

<b>TYPE OF VIOLATION</b>	<b>TOTAL # OF VIOLATIONS</b>	<b># OF SYSTEMS IN VIOLATION</b>	<b>% OF SYSTEMS IN VIOLATION</b>	<b>% OF SYSTEMS IN COMPLIANCE</b>
Monitoring – Major & Minor (Routine & Repeat)	165	131	12%	88%
Non-Acute Coliform MCL	30	28	3%	97%
Acute Coliform MCL	6	6	1%	99%

A total of 201 bacteriological monitoring violations occurred during 2004. These 201 monitoring violations were incurred by 165 water systems.

A total of 34 water systems had Total Coliform MCL violations because water samples tested positive for coliform and/or fecal coliform bacteria. These 34 water systems received a total of 36 acute and non-acute MCL violations. The names of systems that incurred a monitoring or MCL violation are listed in Appendix B.



Non-Acute MCL:

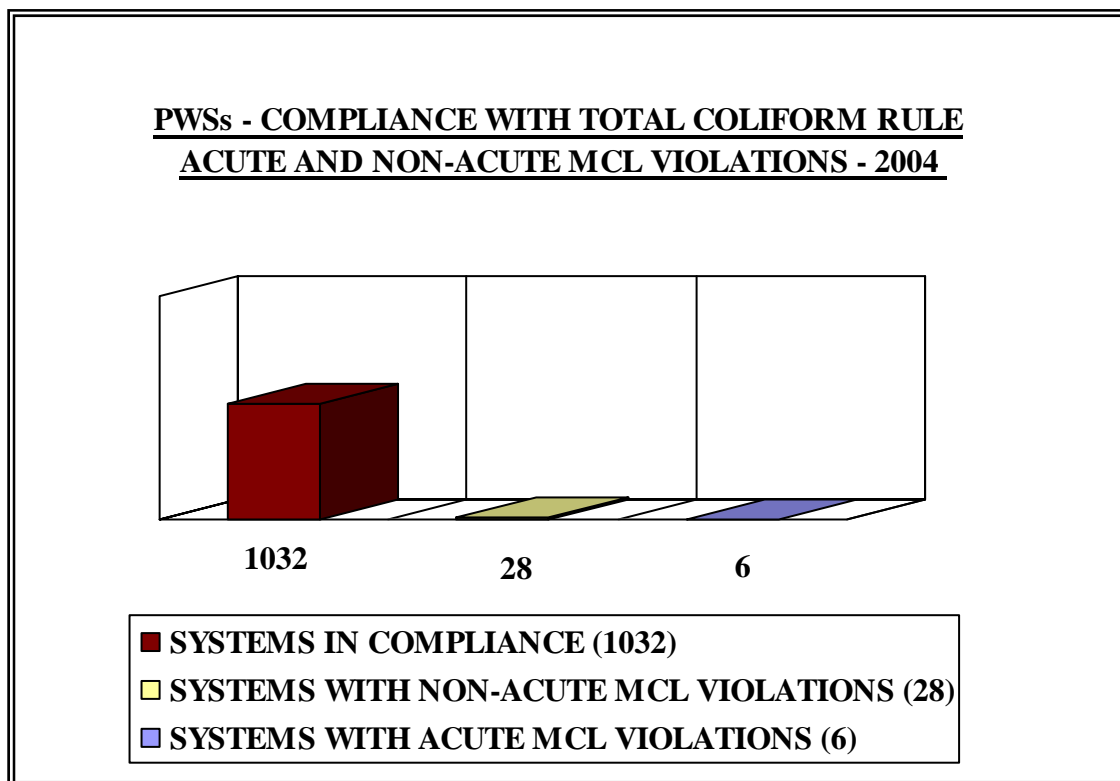
The standard is that no more than one sample per month (no more than 5% of samples for systems doing over 40 samples a month) may contain coliform.

Acute MCL:

When total coliforms are present in any sample, that sample is also analyzed for fecal coliform or E. coli. Any fecal coliform positive repeat sample or E. coli positive repeat sample or any total coliform positive repeat sample following a fecal coliform positive or E coli positive routine sample is an acute coliform violation.

Figure 6 shows a comparison between the water systems that incurred acute and non-acute MCL violations and those in compliance during 2004. Note that the same six systems that had an acute MCL violation also had a non-acute total coliform violation the same month.

**FIGURE 6.**



\*same 6 systems that had acute MCL violations also had non-acute total coliform violation.

Consent Agreements are issued after an Administrative Order as part of the appeals process. This is an agreement between KDHE and the PWS that specific actions will be taken, and the water supply system will stay in compliance for a specific amount of time.

Consent Agreement was issued for:

- 1) Stagg Hill Golf Club, Inc.- Bacteriological, Nitrate Monitoring, PN, etc.

Directives were issued to:

- 1) Emmett – Bacteriological Monitoring
- 2) Hamilton – Bacteriological Monitoring

Administrative Order with Penalty was issued to:

- 1) Sandbox Daycare & Learning Center – Bacteriological, CL, Operator, PN
- 2) Stagg Hill Golf Club – Bacteriological, Nitrate Monitoring, PN, etc
- 3) Wallace Co. RWD #1 – Bacteriological, Nitrate Monitoring, PN, etc.

## **VI. PHASE II/V CHEMICAL RULES**

The Phase II/V Chemical Rule establishes **maximum contaminant levels (MCL)** and **treatment techniques** for various contaminants affecting drinking water, such as solvents, pesticides and herbicides, and heavy metals.

Kansas has adopted these federal drinking water regulations in the **Kansas Administrative Regulations (K.A.R.)**. All the contaminants regulated by this rule may be harmful to human health at certain concentrations and many are toxic and/or carcinogenic. The Phase II/V rules contain five groups of contaminants:

- **ASBESTOS**
- **NITRATE/NITRITE**
- **INORGANIC CHEMICALS (IOC)**
- **VOLATILE ORGANIC COMPOUNDS (VOC)**
- **SYNTHETIC ORGANIC COMPOUNDS (SOC)**

The Phase II/V Rules apply to all community water systems and non-transient non-community water systems. The nitrate/nitrite section of this regulation also applies to transient non-community water systems. Water systems that purchase all their water from other systems are not required to monitor for these contaminants.

Water systems are required to monitor for contaminants under a standardized monitoring schedule consisting of three compliance periods of three years each. During these compliance periods, water systems are required to perform specific monitoring depending on the population served and whether they use surface or groundwater.

The first three-year compliance period began January 1, 1993 and ended December 31, 1995. The second compliance period began January 1, 1996 and ended on December 31, 1998. The third compliance period began January 1, 1999 and ended on December 31, 2001. This completed the first compliance cycle of nine years. The first three-year compliance period of the second nine year compliance cycle began January 1, 2002 and ended on December 31, 2004.

Water systems using surface water are required to monitor more frequently than those using groundwater because surface water is more susceptible to contamination. Water systems with populations greater than 3,300 are also required to monitor more frequently than small systems with populations of 3,300 or less. The monitoring data presented in this report is for calendar year 2004, which is the third year of the first monitoring period in the second compliance cycle.

With the exception of asbestos, this regulation specifies that all the water samples must be collected at the **point of entry (POE)**. The POE is defined as a point after raw water has been treated (disinfected) and before it enters the distribution system.

Water systems are out of compliance with this rule by either failing to monitor or having an MCL violation. These violations require the system to issue public notice by notifying all their consumers of the violation using newspaper, television, radio, mail, and/or posted notices.

#### **VI(a). Asbestos**

Asbestos is a naturally occurring mineral found in the earth's crust in a fibrous form. Inhalation of asbestos fibers has been shown to produce lung tumors in humans. Asbestos can be present in surface and ground water. Because asbestos fibers in water do not evaporate into air or break down in water, small fibers and fiber-containing particles may be carried long distances by water currents before settling to the bottom; larger fibers and particles tend to settle more quickly.

Ingestion of asbestos fibers greater than 10 micrometers in length has been shown to cause benign tumors in laboratory rats. To reduce the potential risk of cancer or other adverse health effects that have been observed in laboratory animals, EPA has set the drinking water standard for asbestos at 7 million fibers per liter (fibers longer than 10 micrometers).

Asbestos generally enters drinking water either from contact with natural mineral deposits or asbestos-cement pipes used in water distribution systems. Geologically, Kansas does not have any naturally occurring asbestos. Therefore, KDHE waived source water asbestos monitoring for all water systems during the first and second compliance cycles. However, water systems that utilize asbestos-cement pipes in their distribution system were required to test for asbestos during the first compliance cycle. To identify systems having asbestos-cement pipes in 1993, KDHE conducted a survey of all water systems. The results of this survey yielded 208 water systems having asbestos-cement pipe. These systems were required to monitor for asbestos in their distribution systems, before the end of the first compliance period (December 31, 1995). Systems with asbestos pipe were required to monitor again during the first period of the second compliance cycle.

## **ASBESTOS MONITORING RESULTS**

Most uses of asbestos were banned in the United States by the EPA on July 12, 1989 because of potential adverse health effects in exposed persons. The remaining, currently allowed uses of asbestos include battery separators, sealant tape, asbestos thread, packing materials, and special industrial gaskets.

Twenty-seven water systems have replaced or abandoned asbestos pipes in their system.

One hundred and thirteen systems tested for asbestos during 2004, for a total of 123 samples. One hundred and twenty of the samples were non-detect. The three detects ranged from 0.198-2.613 Million Fibers per Liter (MFL). K.A.R. 28-15a-23 states “a condition of the waiver shall be a requirement that a system takes a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (9 years).

### **VI(b). Nitrate/Nitrite**

Many drinking water contaminants, such as nitrate and nitrite are found naturally occurring in the environment. Nitrogen may find its way into the groundwater from decaying plant and animal matter, precipitation, and urban runoff. Fertilization of agricultural and urban land with ammonium nitrate, and runoff from livestock operations, are also a significant source of nitrate contamination of groundwater.

Excessive amounts of nitrate and nitrite can cause methemoglobinemia in infants, also known as “blue-baby syndrome.” To safeguard infants from this condition, Kansas regulations (K.A.R. 28-15a-11 & 62 set the MCL for community water systems at 10 **milligrams per liter (mg/L)** for nitrate and 1 mg/L for nitrite as the maximum allowable concentration in public drinking water supplies. Kansas regulations (K.A.R. 28-15a-23) require water systems with their own sources of water to monitor all their **points of entry (POE)** at least once a year for nitrate. Water systems that exclusively use purchased water from other systems are exempt from this monitoring. The nitrate MCL for non-community water systems is set at 20 milligrams per liter (mg/L).

Boiling the water will only concentrate nitrates in drinking water, and should not be attempted. Alternate source of drinking water should be provided for all infants less than six months of age, mothers nursing infants less than six months of age, and pregnant women.

The drinking water provided must meet the requirements of K.A.R. 28-15a-23. If bottled water is chosen to meet this requirement, the water system shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the U.S. Food and Drug Administration concerning the source of the water and monitoring of water quality.

## **NITRATE MONITORING RESULTS**

During 2004, 752 community water systems were required to monitor from 1,104 POEs for nitrate. Twenty three community water systems had analytical results greater than the nitrate MCL of 10 mg/L. The minimum concentration was below the detection limit and the maximum concentration reported was 18 mg/L.

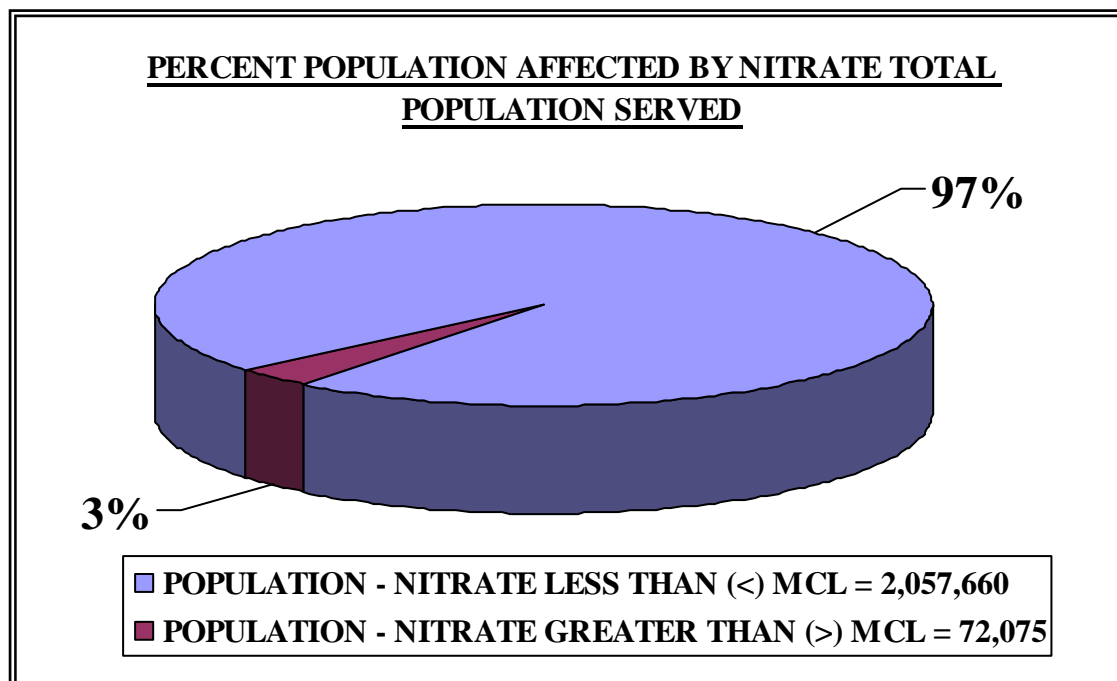
Thirteen water systems received monitoring violations for not submitting the required annual nitrate sample for analysis during 2004.

The water system with the largest population affected by nitrate MCL violations was the City of Garden City with a population of 27,678. The city of Garden City has 16 wells and 8 POEs. The names of systems that incurred a nitrate monitoring or MCL violation are listed in Appendix B.

The total population served by all water systems monitoring for nitrate was 2,129,735. The total population of water systems with no POE monitoring results exceeding the nitrate MCL was 2,057,660. The total population of water systems with a POE monitoring result exceeding the MCL was 72,075, which is less than one percent of the total population.

Figure 7 shows the percentage of population affected by nitrate MCL violations in comparison with the percentage of population of water systems in compliance.

**FIGURE 7.**



## **COMPLIANCE AND ENFORCEMENT**

Water systems with nitrate monitoring results above the MCL or failing to monitor were required to do public notice and provide proof to KDHE that public notice was performed. All water systems with nitrate violations performed the required public notice. Water systems with MCL violations were also required to monitor for nitrate at least quarterly until they are reliably and consistently below the MCL.

During 2004, KDHE issued “Nitrate Consent Orders” for:

- 1) City of Norwich

Other water systems that are operating under consent orders are currently looking for new sources of water that meet all MCL requirements for drinking water.

A Consent Agreement was issued to:

- 1) Stagg Hill Golf Course, Inc.
- 2) Tyson Fresh Meats - Holcomb

### **VI(c). Inorganic Chemicals**

Kansas regulations (K.A.R. 28-15a-23) set MCLs for nine metals and two non-metal contaminants. Table 6 lists these IOC contaminants and their MCLs in **milligrams per liter (mg/L)**. Most of these IOCs occur naturally in the environment and are soluble in water. Because of this, they are potential contaminants of drinking water. However, not all IOCs originate from natural mineral deposits. Industrial activities such as metal finishing, textile manufacturing, mining operations, electroplating, and manufacturing of fertilizers, paints, and glass can also generate these contaminants.

Inorganic contaminants can be toxic to humans at certain levels. Cadmium, chromium, and selenium can cause damage to the kidneys, liver and nervous and circulatory systems. Barium has been associated with high blood pressure and mercury has been shown to damage kidneys. Antimony, beryllium, cyanide, nickel and thallium have been shown to damage the brain, lungs, kidneys, heart, spleen and liver.

IOCs can be removed from drinking water using various available technologies such as coagulation/filtration, lime softening, reverse osmosis, ion exchange, oxidation, activated alumina, and granular activated carbon.

**TABLE 6.**

**REGULATED INORGANIC CHEMICALS (IOCs)**

<b><u>Chemical Name</u></b>	<b><u>Maximum Contaminant Level (MCL)</u></b>
<i>Antimony</i>	0.006 mg/L
<i>Arsenic</i>	0.05 mg/L
<i>Barium</i>	2 mg/L
<i>Beryllium</i>	0.004 mg/L
<i>Cadmium</i>	0.005 mg/L
<i>Chromium</i>	0.1 mg/L
<i>Cyanide-waived</i>	0.2 mg/L
<i>Fluoride</i>	4 mg/L
<i>Mercury</i>	0.002 mg/L
<i>Selenium</i>	0.05 mg/L
<i>Thallium</i>	0.002 mg/L

**IOC MONITORING FREQUENCY**

All community and non-transient non-community water systems are required to monitor each **point of entry (POE)** for IOCs. Water systems using groundwater as their sole source must monitor at least once during every three year compliance period. Systems using surface water as a source must monitor for IOCs at least once a year. Systems exclusively purchasing treated water as their source are exempt from this monitoring.

Water systems incurring a MCL violation are required to increase their monitoring to at least quarterly. Water systems having a MCL or monitoring violation are required to notify their customers of such violations by issuing a public notice.

**IOC MONITORING RESULTS**

During 2004, 233 water systems monitored for IOCs from 386 POEs. Fifteen public water supply systems failed to monitor during the 2002-2004 compliance period.

Fifteen public water supply systems failed to monitor for IOCs during the 2002 – 2004 compliance period. The names of systems that incurred an IOC monitoring violation or MCL violation are listed in Appendix B.

## VI(d) Volatile Organic Compounds

**Volatile organic compounds (VOC)** are commonly referred to as organic solvents. These compounds are constituents of many degreasers, industrial cleaners, spot/stain removers, and paint thinners, and are found in some paints, varnishes and lacquers, many paint removers/strippers, many pesticides and herbicides, most dry cleaning chemicals, many printing inks and printing press chemicals, and most petroleum products including many types of fuels. Most of these compounds are flammable and toxic to varying degrees. Because of these characteristics, they are also a potential source of environmental pollution and pose a health hazard when present in drinking water.

Kansas has established regulations governing VOCs in drinking water. These regulations (K.A.R. 28-15a-24), specify when water systems must monitor their POE for VOC contaminants. Large water systems (serving populations of more than 3,300 people) are required to sample each POE at least annually. Small water systems serving populations of 3,300 or less are required to sample each POE at least once during the three year compliance period. If any contaminants are detected during this regular monitoring additional monitoring is required. Table 7 shows a list of the regulated volatile organic compounds tested by KDHE.

**TABLE 7.**

### **REGULATED VOLATILE ORGANIC COMPOUNDS (VOCs)**

<u>Compound Name</u>	<u>MCL</u>	<u>Uses</u>
<i>Benzene</i>	0.005 mg/L	<i>fuels, pesticides, paints, pharmaceutical</i>
<i>Carbon tetrachloride</i>	0.005 mg/L	<i>degreasing agents, fumigants</i>
<i>Chlorobenzene</i>	0.1 mg/L	<i>industrial solvents, pesticides</i>
<i>cis-1,2 Dichloroethylene</i>	0.07 mg/L	<i>industrial solvents, chemical manufacturing</i>
<i>Dichloromethane</i>	0.005 mg/L	<i>paint strippers, refrigerants, fumigants</i>
<i>Ethylbenzene</i>	0.7 mg/L	<i>gasoline, insecticides</i>
<i>o-Dichlorobenzene</i>	0.6 mg/L	<i>insecticides, industrial solvents</i>
<i>p-Dichlorobenzene</i>	0.075 mg/L	<i>insecticides, moth balls</i>
<i>Styrene</i>	0.1 mg/L	<i>plastics, synthetic rubber, resins</i>
<i>Tetrachloroethylene</i>	0.005 mg/L	<i>dry cleaning/industrial solvents</i>
<i>trans-1,2 Dichloroethylene</i>	0.1 mg/L	<i>industrial solvents, chemical manufacturing</i>
<i>Trichloroethylene</i>	0.005 mg/L	<i>paint strippers, dry cleaning, degreasers</i>
<i>Vinyl chloride</i>	0.002 mg/L	<i>plastics/synthetic rubber, solvents</i>
<i>Xylenes</i>	10 mg/L	<i>paints/inks, solvents, synthetic fibers, dyes</i>
<i>1,1 Dichloroethylene</i>	0.007 mg/L	<i>paints, dyes, plastics</i>
<i>1,1,1 Trichloroethane</i>	0.2 mg/L	<i>metal cleaning/degreasing agent</i>
<i>1,1,2 Trichloroethane</i>	0.005 mg/L	<i>industrial degreasing solvents</i>
<i>1,2 Dichloroethane</i>	0.005 mg/L	<i>gasoline, insecticides</i>
<i>1,2 Dichloropropane</i>	0.005 mg/L	<i>soil fumigants, industrial solvents</i>
<i>1,2,4 Trichlorobenzene</i>	0.07 mg/L	<i>industrial solvents</i>



## VOC MONITORING RESULTS

Two-hundred nine water systems monitored 307 POEs during 2004 for 322 sample tests.

VOC monitoring during 2004 concluded with only one water system having an analytical value greater than the MCL. Pratt Airport had two carbon tetrachloride MCL violations.

### VI(e) Synthetic Organic Compounds

**Synthetic organic compounds (SOC)** are man-made compounds, many of which are chlorinated and used as herbicides, pesticides, fungicides and insecticides. Kansas regulations (K.A.R. 28-15a-24), require water systems to monitor their drinking water for 33 SOC. MCLs for each of these SOC contaminants are set by Kansas regulation K.A.R. 28-15a-61.

Water systems failing to monitor or incurring an MCL violation for any of the compounds listed in Table 8 must notify the public of such violation and provide proof of performing such public notice to KDHE.

Table 8 shows a list of the regulated synthetic organic compounds tested by KDHE.

**TABLE 8.**

### **REGULATED SYNTHETIC ORGANIC COMPOUNDS (SOCs)**

<u>Compound Name</u>	<u>MCL</u>	<u>Uses</u>
<i>Alachlor (Lasso)</i>	0.002 mg/L	<i>herbicide</i>
<i>Aldicarb</i>	0.003 mg/L	<i>insecticide</i>
<i>Aldicarb sulfoxide</i>	0.003 mg/L	<i>insecticide</i>
<i>Aldicarb sulfone</i>	0.003 mg/L	<i>insecticide</i>
<i>Atrazine (Atranex, Crisazina)</i>	0.003 mg/L	<i>herbicide</i>
<i>Benzo(a)pyrene</i>	0.0002 mg/L	<i>coal tar lining &amp; sealants</i>
<i>Carbofuran (Furadan 4F)</i>	0.04 mg/L	<i>rootworm, weevil control</i>
<i>Chlordane</i>	0.002 mg/L	<i>termite control</i>
<i>Dalapon</i>	0.2 mg/L	<i>herbicide</i>
<i>Dibromochloropropane(DBCP)</i>	0.0002 mg/L	<i>pesticide, nematocide, fumigant</i>
<i>2,4-D</i>	0.07 mg/L	<i>herbicide, defoliant</i>
<i>2,4,5-TP (Silvex)</i>	0.05 mg/L	<i>herbicide, defoliant</i>
<i>Di(diethylhexyl)adipate</i>	0.4 mg/L	<i>plasticizer</i>
<i>Di(diethylhexyl)phthalate</i>	0.006 mg/L	<i>plasticizer</i>
<i>Dinoseb</i>	0.007 mg/L	<i>insecticide, herbicide</i>
<i>Diquat</i>	0.02 mg/L	<i>herbicide</i>
<i>Endothall</i>	0.1 mg/L	<i>herbicide, defoliant</i>

<u>Compound Name</u>	<u>MCL</u>	<u>Uses</u>
<i>Endrin</i>	0.002 mg/L	<i>insecticide</i>
<i>Ethylene Dibromide (EDB)</i>	0.0005 mg/L	<i>gasoline additive, fumigants, &amp;</i>
<i>Glyphosate</i>	0.7 mg/L	<i>herbicide</i>
<i>Heptachlor (H-34, Heptox)</i>	0.0004 mg/L	<i>termite control</i>
<i>Heptachlor epoxide</i>	0.0002 mg/L	<i>insecticide</i>
<i>Hexachlorobenzene</i>	0.001 mg/L	<i>by-product; solvents &amp; pesticides</i>
<i>Hexachlorocyclopentadiene</i>	0.05 mg/L	<i>pesticide, fungicide</i>
<i>Lindane</i>	0.0002 mg/L	<i>pesticide</i>
<i>Methoxychlor (DMDT, Marlath)</i>	0.04 mg/L	<i>insecticide</i>
<i>Oxamyl (Vydate)</i>	0.2 mg/L	<i>insecticide</i>
<i>Pentachlorophenol (PCP)</i>	0.001 mg/L	<i>herbicide, fungicide, wood</i>
<i>Picloram (Tordon)</i>	0.5 mg/L	<i>herbicide, defoliant</i>
<i>Polychlorinated Biphenyls (PCB)</i>	0.0005 mg/L	<i>herbicide</i>
<i>Simazine</i>	0.004 mg/L	<i>herbicide</i>
<i>2,3,7,8 TCDD (Dioxin)</i>	3x10 <sup>-8</sup> mg/L	<i>pesticide byproduct</i>
<i>Toxaphene</i>	0.003 mg/L	<i>pesticide</i>

## **MONITORING FREQUENCY**

During the first compliance period of 1993 through 1995, all required water systems performed monitoring for all SOC's listed in Table 8 above, with the exception of the chemicals previously waived. **Atrazine** and **ethylene dibromide (EDB)** were the only contaminants in the SOC group that were detected over their MCL during this first compliance period.

Based on these monitoring results, KDHE (with EPA approval) allowed water systems to only monitor for atrazine and EDB during the subsequent compliance period of 1996 through 1998. Other than atrazine, a widely use herbicide, no other contaminants were detected by themselves. Alachlor, the only other pesticide detected, always appeared in conjunction with atrazine.

Water systems utilizing groundwater were required to monitor each POE at least once during the last three year compliance period (2002-2004). Small systems (population# 3,300) utilizing surface water were required to monitor their POE a minimum of one quarter during the three year compliance period, collecting the water sample during the months of May or June. Large surface water systems (population > 3,300) were required to monitor their POE at least annually during the months of May or June. Water systems using groundwater that had no SOC's detected during the first compliance period (1993-95), were tested for atrazine during 1996 through 1998 using an immunoassay method (EPA Method 4670). This immunoassay method was used because it is highly sensitive in detecting any contaminant in the triazine chemical family and is one fourth the cost of the regular drinking water method (EPA Method 507).

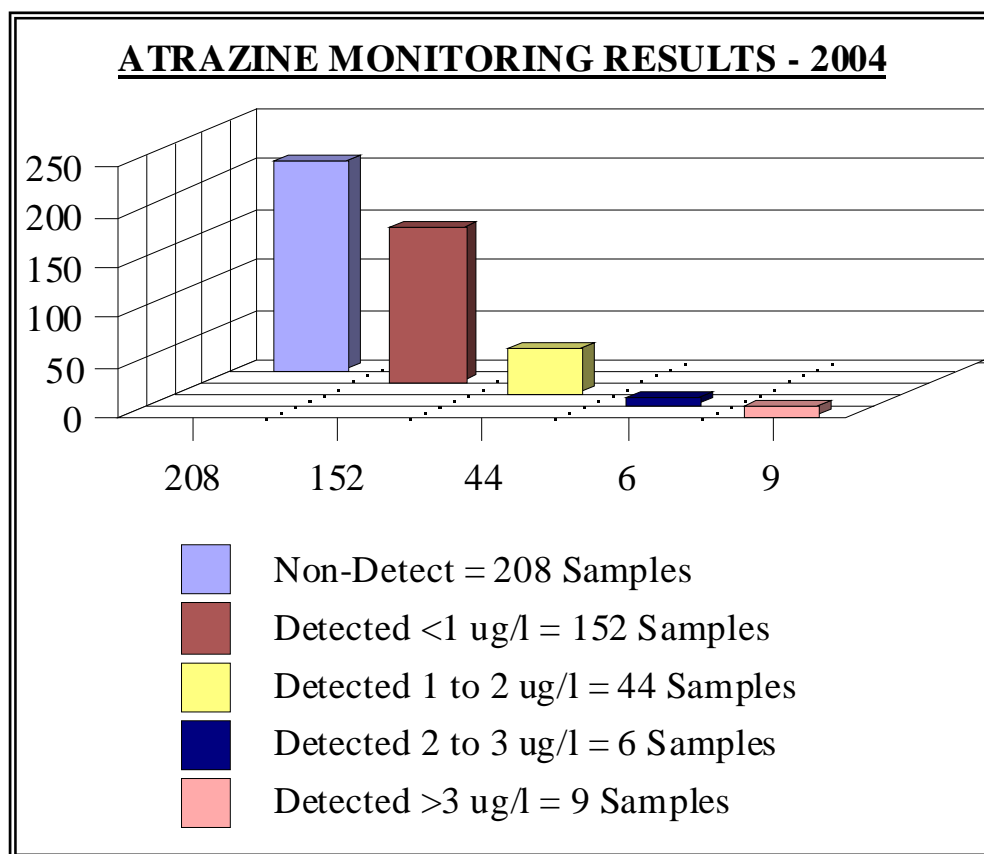
A groundwater system with previous SOC detects and all surface water systems were required to perform the regular atrazine testing using EPA Method 507. This method also detects alachlor, the only other pesticide detected during the previous compliance period.

### **SOC MONITORING RESULTS**

A total of 277 water systems collected water samples from 378 POEs for a total of 485 SOC tests from during 2004.

Of the 485 POE water samples collected during 2004, 329 samples or 68 percent showed atrazine not detected, 157 samples detected atrazine between a range of 0.1-8.2 ug/L. One hundred and seventeen detected concentrations below 1.0 ug/L, 25 detected concentrations between 1.0 and 2.0 ug/L, 6 detected concentrations between 2.0 and 3.0 ug/L, and 6 detected concentrations greater than the MCL of 3.0 ug/L. (Running yearly average put all 6 under the MCL) See Figure 8.

**FIGURE 8.**



## **VII. UNREGULATED CONTAMINANTS**

The 1996 SDWA Amendments require EPA to mandate monitoring for unregulated contaminants (UCMR) of all community public water supply systems and non-transient, non-community water systems serving over 10,000 people, and randomly selected small water supply systems. The unregulated contaminant monitoring information will be used to develop a database to help guide EPA's efforts to select drinking water contaminants for future regulation. Effective January 1, 2001, there are three levels of monitoring, involving different numbers of systems and different contaminant lists. All water systems must all use an EPA designated laboratory following UCMR quality control specifications. The three levels are: (1) Assessment monitoring for List 1 contaminants (must be done within the three years of 2001 through 2003). (2) Screening Survey for List 2 contaminants, and (3) Pre-Screen Testing, which is only required for a small subset of systems that are most vulnerable to List 3 contaminants.

Results must be reported to the public under Consumer Confidence Rule (CCR) and Public Notification requirements.

## **VIII. LEAD AND COPPER**

High exposure to metals has long been recognized as a cause of adverse health effects in humans. Lead has been singled out because of its possible appearance in drinking water and its high toxicity to humans. Copper, although an essential nutrient, also poses a health threat at elevated levels. Young children are especially susceptible to the toxic effects of these metals.

Lead and copper found in water pipes and in old plumbing solder can leach into the drinking water. Besides leaching from water pipes and solder, lead and copper can also leach from brass water faucet fixtures. As a step to reduce lead in drinking water, regulations prohibit the use of lead water pipes and lead plumbing solder.

KDHE regulations govern lead and copper in drinking water and can be found at K.A.R. 28-15a-80. These regulations apply to all community water systems and non-transient non-community water systems. These water systems are required to monitor for lead and copper on a scheduled basis. If monitoring results indicate unacceptable levels of lead or copper, the water system is required to initiate corrosion control treatment techniques to minimize lead and/or copper contamination. Action levels set by this regulation are 0.015 milligrams per liter (mg/L) (15 micrograms per liter (F g/L)) for lead, and 1.3 mg/L (1,300 F g/L) for copper. If the 90<sup>th</sup> percentile tap water sample exceeds either lead or copper, it represents a long-term risk to health.

## **LEAD AND COPPER MONITORING RESULTS**

One hundred thirty-two public water systems were scheduled to monitor for lead and copper during 2004. Four systems incurred monitoring violations by failing to perform their required routine or follow-up tap sampling. The four water systems were required to complete public notification.

Six systems exceeded the copper action level, and one system exceeded the lead action level. All seven systems were required to implement corrosion control treatment or modify existing treatment.

These lead and copper violations translate to a 99% compliance rate for monitoring and a 97% compliance rate for treatment installation and public education. The names of the systems which incurred violations of this regulation during 2004 are listed in Appendix B.

## **COMPLIANCE AND ENFORCEMENT**

An Administrative Order with Penalty was issued to:

- 1) City of Thayer – lead and copper monitoring violation

## **IX. DISINFECTION BY-PRODUCTS**

To ensure drinking water is safe and pathogen free it must be disinfected. The most commonly used method of disinfection is chlorination. Unfortunately, the chlorine added to water to kill harmful microorganisms also combines with organic matter naturally present in water to form chemical compounds called **trihalomethanes** or **THMs**. These THMs are suspected of being carcinogens, which has been suggested to cause bladder cancer and reproductive effects in humans.

Beginning January 1, 2002, the Stage 1 Disinfectants and Disinfection By-Product Rule (DBPR) required more monitoring and adopted new MCLs to improve quality of drinking water and increase protection to public health. This Rule affects all surface water systems and ground water systems under the direct influence of surface water serving 10,000 or more people. By January 1, 2004, all surface water systems and ground water systems under the direct influence of surface water serving <10,000, and all ground water systems must comply with the Stage 1 DBPR requirements.

The MCL for total trihalomethanes (TTHM) has been lowered to 80 parts per billion (ppb) and the MCL for haloacetic acids (HAA5) MCL is 60 ppb. The MCLs will reduce exposure to specific DBPs from the use of ozone (byproduct: bromate), chlorine dioxide (byproduct: chlorite), and chlorine (byproduct: total trihalomethanes (TTHMs) and five Haloacetic Acids (HAA5s).

In addition, the Stage 1 DBPR established a treatment technique that requires conventional filtration systems to remove specific percentages of organic materials measured as total organic compounds (TOCs) that may react with disinfection byproduct precursors (DBPPs) to form both regulated and non-regulated DBPs.

Table 9 shows the Disinfection Byproduct contaminants which systems must monitor in drinking water.

**TABLE 9.**

**STAGE 1 DBPR**

<b>Disinfection By-Product</b>	<b>MCLG (mg/L)</b>	<b>(MCL (mg/L)</b>
<b>Total Trihalomethanes (TTHM)</b>	<b>N/A</b>	<b>0.080</b>
Chloroform	N/A	N/A
Bromodichloromethane	zero	N/A
Bromoform	zero	N/A
Dibromochloromethane	0.06	N/A
<b>Five Haloacetic Acids (HAA5)</b>	<b>N/A</b>	<b>0.060</b>
Monochloroacetic Acid	N/A	N/A
Dichloroacetic Acid	zero	N/A
Trichloroacetic Acid	0.3	N/A
Monobromoacetic Acid	N/A	N/A
Dibromoacetic Acid	N/A	N/A
Chlorite	0.8	1.0
Bromate	zero	0.010

**MONITORING RESULTS FOR TTHMs AND HAA5s**

Compliance for TTHM and HAA5 MCLs is based on a running annual arithmetic average, computed quarterly, of quarterly averages of all samples. Compliance for the chlorite MCL is based on an arithmetic average of each three samples set taken in the distribution system. Compliance for the bromate MCL is based on a running annual arithmetic average, computed quarterly, of monthly samples.

Four hundred and twenty systems were required to monitor for TTHMs and HAA5s during 2004. Most large water systems in Kansas are surface water systems. Surface water generally has more dissolved organic material than groundwater. Forty-eight water systems received 90 MCL violations for TTHMs during 2004. Thirty-seven water systems received 75 MCL violations for HAA5s during 2004. Two systems received reporting violations for TTHMs and HAA5s. An 88 percent compliance rate was achieved for TTHMs and a 91 percent compliance rate was achieved for HAA5s during 2004. Systems which incurred violations of this regulation during 2004 are listed in Appendix B.

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## **X. SURFACE WATER TREATMENT**

Almost one third (378) of all water systems in Kansas use surface water for part or all of their drinking water. This includes systems that purchase their water. These water systems provide drinking water to about two thirds of the State's population. Water for these systems originates from rivers or man-made reservoirs located throughout the state.

Unlike most groundwater that is protected by the earth's crust, surface water is exposed to the atmosphere and surface runoff. This exposure makes surface water more vulnerable to contamination than most groundwater. For this reason, a regulation has been developed specifically for surface water and groundwater under the influence of surface water, such as springs and shallow wells which are susceptible to surface contamination.

Kansas regulation K.A.R. 28-15a-70 addresses specific treatment requirements for surface water. This regulation requires that surface water systems, "provide filtration and disinfection treatment of source water." This regulation is known as the Surface Water Treatment rule or SWTR.

This regulation requires water systems to filter the water, and keep a record of turbidity readings of the treated water entering the distribution system. High turbidity levels adversely affect the efficiency of the disinfection process, contribute to the undesirable formation of **trihalomethanes (THMs)**, and indicate that viruses or *Giardia Lamblia* may be present. For these reasons, turbidity limits are set depending on the type of filtration used.

The maximum allowable for any single finished water turbidity reading is 1 **nephelometric turbidity unit (NTU)**. Additionally, for a system to be in compliance, at least 95 percent of the filtered water samples during a month must have turbidity levels less than or equal to 0.3 NTUs.

*Cryptosporidium* is a protozan associated with the disease "cryptosporidiosis" in humans. This disease can be transmitted through ingestion of drinking water, person-to-person contact, or through other exposure routes. Cryptosporidiosis may cause acute diarrhea, abdominal pain, vomiting, and fever that last 1-2 weeks in healthy adults, but may be chronic or fatal in immunocompromised people.

*Giardia lamblia* is a protozoan which can survive in water for 1 to 3 months; it is associated with the disease "giardiasis". Ingestion of this protozoan in contaminated drinking water, exposure from person-to-person contact, and other exposure through other routes may cause giardiasis. The symptoms of this gastrointestinal disease may persist for weeks or months and include diarrhea, fatigue, and cramps.

These regulations also require that the filtering process, in conjunction with the disinfection treatment, remove or inactivate 99.99 percent of viruses and 99.9 percent of *Giardia lamblia* cysts. The presence of viruses in drinking water can cause stomach cramps and/or gastroenteritis (intestinal distress). The chlorine (disinfectant) concentration in the water entering the distribution system is required to be at least 0.2 mg/L of free chlorine or 1.0 mg/L of combined chlorine. Chlorine residual readings must be taken daily at set intervals and recorded by the water operator. Turbidity and disinfection records are required to be submitted to KDHE on a monthly basis for compliance determination.

## **SURFACE WATER MONITORING RESULTS**

There were a total of 109 systems monitoring for compliance (including systems using groundwater under the influence of surface water, surface water, and a combination of ground water and surface water) under the SWTR regulations. During 2004, 5 water systems incurred 11 violations of the surface water treatment technique regulation. Six water systems incurred 10 monitoring, or routine/repeat violations.

These water systems had a monitoring compliance rate of 91 percent and a treatment technique compliance rate of 93 percent. Eighteen systems performed public notification requirements for such violations to their customers. The names of the systems which incurred violations of this regulation during 2004 are listed in Appendix B.

## **XI. RADIONUCLIDES**

Most radiation occurs naturally and is readily present in the environment. Radiation in groundwater commonly occurs when water comes in contact with the natural decay of uranium in rocks and soils. In most circumstances, this radiation occurs at such low levels that it is harmless to human health. The purpose of the Radionuclides Rule is to reduce the exposure to radionuclides in drinking water, and therefore, to reduce the risk of cancer and toxic kidney effects from uranium.

Occasionally, in some areas of the state, these radiation levels occur at higher levels which may present a risk to human health. For this reason, regulations which have been adopted require community water systems to monitor their drinking water for radionuclides. Only community water systems are required to monitor their drinking water for radionuclides.

Prior to 2002, there was no standard for uranium, but monitoring started in 1984. The final rule became effective December 8, 2003. The rule regulates uranium for the first time at an MCL of 30 ug/L. Water systems with monitoring results greater than the MCL will be required to monitor quarterly until four consecutive quarters are below the MCL. These water systems will also be required to issue a public notice informing their customers of the MCL violation. The rule retains the existing MCLs for combined radium 226 and radium 228, gross alpha particle radioactivity, and beta particle and photon activity.

Table 10 lists the radiological contaminants along with their common sources, and the corresponding MCLs as set by Kansas regulations in K.A.R. 28-15a-66.



**TABLE 10.**

**RADIONUCLIDES**

CONTAMINANT	SOURCES / USES	MCL
Gross alpha	natural decay of uranium in rocks and soil	15 pCi/L
Gross beta	natural decay of uranium in rocks and soil, nuclear weapon production, pharmaceuticals	50 pCi/L or 4 mrem/yr
Radium 226 & 228	natural decay of uranium in rocks and soil	5 pCi/L
Strontium-90	artificial isotope, used in research and medicine, in industrial density measuring devices, in atomic batteries, in luminous paint	8 pCi/L
Tritium	man-made isotope, used as chemical tracer in research, in nuclear weapons production, in luminous instrument dials	20,000 pCi/L
Uranium	natural decay of uranium in rocks and soil	30 ug/L

Key: pCi/L = picoCurie per liter  
mrem/yr = millirem per year

**MONITORING RESULTS FOR RADIONUCLIDES**

Two water systems incurred two MCL violations for Gross alpha. Combined radium (226 & 228) also had two water systems incur two MCL violations during 2004. The population affected by this MCL violation was 615. These water systems were notified by KDHE of the MCL violations and required to issue public notice. No water systems had radionuclide monitoring violations during 2004. The name of the systems which incurred a radiological MCL violation is listed in Appendix B.

**MONITORING RESULTS FOR URANIUM**

No water systems incurred a MCL violation for uranium during 2004.

## **XII. CONSUMER CONFIDENCE REPORT (CCR)**

The Consumer Confidence Report (CCR) rule is a requirement of the 1996 Safe Drinking Water Act. It gives consumers more information on their drinking water quality and opportunities to get involved in protecting their source of water. The final CCR Rule was promulgated by EPA on August 19, 1998.

Under the CCR rule, all community water systems (CWSs) are required to provide customers with an annual water quality report or CCR. EPA specified certain health risk language to be included in the reports, when regulated contaminants are detected. CCRs summarize information to help educate and inform customers about their water system. Water supply systems with a population over 100,000, must post their CCR on the Internet.

The CCR rule required the first report to contain data used to determine compliance in calendar year 1998, and to be delivered by October 1, 1999. All subsequent annual reports are due by July 1 and will include information from the previous calendar year.

By July 1, 2004, 909 community water systems were to deliver the CCR for calendar year 2003 to their customers, and send a copy of the actual report and a certificate of delivery to KDHE. The number of facilities in violation for not delivering a copy of their CCR to their customers by July 1, 2004 was 76. Notices of the violation were sent to the facilities on August 27, 2004, followed by phone calls to non-responding water systems. Ninety-five percent of community water systems are in compliance, 5 facilities are still in violation: Cherokee Co. RWD #9, City of Elgin, Labette Co. RWD #5, City of Morland and City of Spivey.

## **XIII. OPERATOR CERTIFICATION**

The State of Kansas, through the Department of Health and Environment (KDHE), requires all public water supply systems to have a certified operator in direct responsible charge of the water treatment and water distribution systems. The operators must be certified by the department at the same classification of the plant or water distribution system. The facilities are classified according to complexity, with Class IV being the most complex. If a water supply system prefers, they may contract with a certified operator in lieu of maintaining a full time person on staff.

## SYSTEM CLASSIFICATION

Table 11 lists the description of the water supply system classification.

**TABLE 11**

## SYSTEM CLASSIFICATION

CLASS	YRS. EXP.	DESCRIPTION	POPULATION SERVED
Small System	6 Months	1. Distribution System Only 2. Chlorination of Groundwater only	All <501
I	1 year	1. Chlorination of Groundwater only 2. Treatment of Groundwater*	501 - 1,500 <501
II	1 year	1. Chlorination of Groundwater only 2. Treatment of Groundwater* 3. Treatment of Surface Water	1,501 - 5,000 501 - 2,500 <2,501
III	2 years	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water*	5,001 - 20,000 2,501 - 10,000
IV	2 years	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water*	>20,000 >10,000

\* Includes iron and manganese removal; softening, membrane filtration, coagulation, sedimentation, filtration, recarbonation, and chemical addition (other than chlorine)

Table 12 shows the number of PWSs by classification, and the number of certified operators by class.

**TABLE 12**

**NUMBER OF CERTIFIED OPERATORS**

<b>CLASSIFICATION</b>	<b># PWS BY CLASSIFICATION</b>	<b># CERTIFIED OPERATORS</b>
Small Systems	726	454
Class I	138	421
Class II	132	479
Class III	46	184
Class IV	25	423

KDHE has awarded the Kansas Rural Water Association (KRWA) the OIT Emergency Technical Training Grant. Upon the request of KDHE, KRWA will provide emergency technical assistance to public water supply systems who lose their sole certified operator.

**XIV. GOVERNMENT PERFORMANCE RESULTS ACT (GPRA)**

The Government Performance Results Act (GPRA) establishes a goal of having 95% of the population served by community water systems not reporting any health-based violations. The data presented in the following table is based on information provided by the U.S. EPA and is representative of violations incurred during federal fiscal years (October 1 through September 30).

<b>FY</b>	<b># of Violations</b>	<b>Community Systems</b>	<b>Community Systems w/ Violations</b>	<b>% of Systems w/o Violations</b>	<b>Population w/ Violations</b>	<b>Total Population Served</b>	<b>% Population w/o Violations</b>
2000	154	919	93	90%	121,863	2,418,480	95%
2001	112	918	58	94%	136,397	2,426,588	94%
2002	130	918	80	91%	86,361	2,512,616	97%
2003*	125	912	84	91%	287,363	2,581,726	89%
2004	151	911	97	89%	181,965	2,562,950	93%

\* The population score in 2003 was impacted by the large (>10,000 population) systems with Stage 1 DDBP MCL violations. Treatment modifications and O & M changes have lowered the concentrations of these contaminants in these systems to levels below the MCL

**XV. WATER SYSTEM COMPREHENSIVE COMPLIANCE SUMMARY**

The following table shows the percentage of all water systems that had no monitoring and/or MCL violations occurring during 2004 for each specific drinking water regulation.

**TABLE 13.**

**WATER SYSTEMS COMPREHENSIVE COMPLIANCE SUMMARY  
FOR ALL VIOLATIONS**

<b>REGULATION</b>	<b>% in COMPLIANCE</b>
Total Coliform Rule - Non-Acute	97 %
Nitrate / Nitrite	95 %
Inorganic Chemicals (IOCs)	98 %
Volatile Organic Compounds (VOCs)	99 %
Synthetic Organic Compounds (SOCs)	99 %
Total Trihalomethanes (TTHMs)	88 %
Haloacetic Acids (HAA5s)	91 %
Lead and Copper Rule - Monitoring	99 %
Treatment Installation	97 %
Surface Water Treatment Rule - Monitoring	95 %
Treatment Technique	94 %
Radionuclides Rule	99 %
Consumer Confidence Rule	99 %

## **XVI. WATER SYSTEM COMPLIANCE COMPARISON**

Table 14 shows a comparison of the overall compliance percentages for all water systems over the last three years.

**TABLE 14.**

### **WATER SYSTEMS COMPLIANCE & COMPARISON FOR 2001, 2002, 2003, & 2004**

<b>REGULATION</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Total Coliform Rule	Non-Acute - 96% Mon. Major/Min.- 97%	Non-Acute - 96% Mon. Major/Min.- 85%	Non-Acute - 97% Mon. Major/Min.- 89%	Non-Acute - 97%
Nitrate	97%	97%	97%	95%
Inorganic Chemicals (IOCs)	99%	99%	99%	98%
Volatile Organic Compounds (VOCs)	100%	100%	100%	99%
Synthetic Organic Compounds (SOCs)	100%	100%	100%	99%
Total Trihalomethanes (TTHMs)	93%	91%	91%	88%
Total Haloacetic Acids (HAA5s)	93%	91%	91%	91%
Lead and Copper Rule- Monitoring Treatment Installation	94%	74% 97%	98% 97%	99% 97%
Surface Water Treatment - Monitoring Treatment Technique	92%	92%	97% 92%	95% 94%
Radionuclides Rule	99%	99%	99%	99%
Consumer Confidence Rule	99%	99%	99%	99%

## **XVII. SUMMARY**

Appendix A lists the number of MCL, treatment technique, and monitoring/reporting violations by regulated parameter. This information is entered into the State Drinking Water Information System (SDWIS). There were no violations for the majority of parameters. The following is a summary of parameters which incurred violations.

Bacteriological monitoring resulted in 34 water systems having coliform MCL violations, 6 of which also incurred acute MCL violations. These results translate to 97 percent of all systems being in compliance. The population affected by these MCL violations was 47,080, or less than 3 percent of the population served by all water systems. The number of systems with total coliform major monitoring violations was 40, with 52 violations, or 88 percent. The population affected by these monitoring violations was 11,357 or 0.3 percent of the population served by all systems. Overall, 159 water systems had at least one bacteriological MCL or monitoring violation during 2004. This means that 901 water systems were in compliance with the Total Coliform Rule.

In the organic contaminant group, one system incurred a VOC MCL violation for carbon tetrachloride, and one system incurred a SOC MCL violation for Atrazine during 2004.

In the inorganic chemicals (IOCs) group, nitrate and asbestos were the only contaminants detected above the MCL during 2004. Nitrate MCL or monitoring violations occurred in 38 out of 752 systems monitoring. This translates to a compliance rate of 95 percent of water systems in compliance. The population affected by these nitrate MCL violations was 46,615, or less than 2 percent of the total population served in Kansas. Fifteen public water supply systems received MCL violations for not monitoring during the 2002 – 2004 compliance period. Overall, systems were 98 percent in compliance with IOCs during 2004.

Selenium was not detected above the MCL in any of the water systems required to monitor during 2004. This translates to 100 percent of water systems in compliance.

Lead and copper monitoring resulted in 4 water systems with monitoring violations. The number of systems monitoring for lead and copper was 132. During 2004, 99 percent of water systems were in compliance with monitoring requirements and 97 percent were in compliance with treatment installation. Six systems exceeded the copper action level; one system exceeded the lead action level.

Disinfection by-product monitoring for TTHMs at 420 water systems resulted in 51 water systems receiving 165 MCL violations during 2004. These results translate to a TTHM compliance rate of 88 percent during 2004. The HAA5 compliance rate was 91 percent during 2004.

Eleven out of 109 water systems using surface water incurred Surface Water Treatment Rule (SWTR) violations. Of the 11 systems with violations, five water systems had 11 treatment technique violations, leaving 94 percent of water systems in compliance. Six water systems had 10 monitoring/reporting violations, leaving 95 percent of water systems in compliance.

Radionuclide monitoring resulted in two water systems detecting radium 226/228 above the MCL. This amounts to a compliance rate of 99 percent with less than one percent of systems being in violation. The population affected by this radium MCL violation was 283.

Nine hundred and eight community water systems were to deliver the CCR for calendar year 2004 to their customers by July 1, 2004. Seventy-six water systems were in violation of the July 1 due date. Five public water systems still have monitoring violations. The population affected by the 5 water systems is 2,306. This amounts to 99 percent of water systems being in compliance.

The overall compliance rate for all Kansas public water supplies (CWSs, NTNCWSs, and TNCWSs) with drinking water regulations during 2004 was 89 percent. A total of 195 water systems incurred at least one violation of a drinking water regulation. This left 874 water systems operating out of the 1,060 water systems having no violations during 2004.



**APPENDIX A**

**VIOLATIONS BY ANALYTICAL CODES**

**JULY 2005**

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
SDWIS Codes	Organic Contaminants (VOC / SOC)							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	0.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	0.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 <sup>-8</sup>	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2265	Acrylamide				0	0		
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	1	1			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	1	2			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0

**State: KANSAS**

Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
	Disinfectant By-Products							
0400	Failure to provide monitoring plan	N/A	0	0			0	0
0999	Chlorine	4	4	4			0	0
1008	Chlorine Dioxide	.8	0	0			0	0
1009	Chlorite/ClO <sub>2</sub>	1.0	0	0			0	0
2456	HAA5 MCL	0.060	75	37			2	2
2920	Total Organic Carbon (TOC)	N/A	0	0	22	19	0	0
2940	Total Organic Carbon (TOC)	N/A	0	0			0	0
2950	Total Trihalomethanes	0.080	90	48			2	2

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	<b>Subtotal</b>		<b>172</b>	<b>92</b>	<b>22</b>	<b>19</b>	<b>4</b>	<b>4</b>
	<b>Inorganic Contaminants (IOC)</b>							
<b>1074</b>	<b>Antimony</b>	<b>0.006</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1005</b>	<b>Arsenic</b>	<b>0.05</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1094</b>	<b>Asbestos</b>	<b>7 million fibers/R# 10 µm long</b>	<b>2</b>	<b>2</b>			<b>15</b>	<b>15</b>
<b>1010</b>	<b>Barium</b>	<b>2</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1075</b>	<b>Beryllium</b>	<b>0.004</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1015</b>	<b>Cadmium</b>	<b>0.005</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1020</b>	<b>Chromium</b>	<b>0.1</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>
<b>1024</b>	<b>Cyanide (as free cyanide)</b>	<b>0.2</b>	<b>0</b>	<b>0</b>			<b>0</b>	<b>0</b>
<b>1025</b>	<b>Fluoride</b>	<b>4.0</b>	<b>0</b>	<b>0</b>			<b>15</b>	<b>15</b>

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1035	Mercury	0.002	0	0			15	15
1040	Nitrate	10 (as Nitrogen)	38	21			14	13
1041	Nitrite	1 (as Nitrogen)	0	0			0	0
1045	Selenium	0.05	0	0			0	0
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	1	1			0	0
4010	Radium-226 and radium-228	5 pCi/l	2	2			0	0
4101	Gross beta	4 mrem/yr	0	0			0	0
	Subtotal Water Chemistry		43	26			149	148



<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	Acute MCL violation	Presence	6	6				
22	Non-acute MCL violation	Presence	29	28				
23,25	Major routine and follow up monitoring						55	43
28	Sanitary survey						State initiates Sanitary Survey	State initiates Sanitary Survey
	Subtotal		35	34			55	43
	Surface Water Treatment Rule (SWTR)							
	Filtered systems							
36	Monitoring, routine/repeat						11	5
38	Indiv. Filter Monitoring Vio.						0	0

<b>State: KANSAS</b>
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Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
41	Treatment techniques				10	6		
	Unfiltered systems							
31	Monitoring, routine/repeat						0	0
42	Failure to filter				0	0		
	Subtotal				10	6	11	5
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						0	0
52	Follow-up or routine lead and copper tap M/R						4	4
57	Treatment Recommendation Violation				0	0		
65	Public education				1	1		

State: KANSAS								
Reporting Interval:	2004 Calendar Year	MCL (mg/l) <sup>i</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Subtotal				1	1	4	4

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

SDWIS CODES	Consumer Confidence Rule	Monitoring / Reporting Number of Violations	Monitoring/ Reporting Number of Systems With Violations	Treatment Techniques Number of violations	Treatment Techniques Number of Systems With Violations	Significant Monitoring/Reporting Number of Violations	Significant Number of Systems W/Vio.
71	Failure to Report					76	76
72	Report Inadequacy					0	0

## Definitions for the Violations Table above

The following definitions apply to the Summary of Violations table.

**Filtered Systems:** Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

**Inorganic Contaminants:** Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. Regulations have established MCLs for 15 inorganic contaminants [40 CFR 141.62].

**Lead and Copper Rule:** This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

**Initial lead and copper tap M/R:** A violation where a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

**Follow-up or routine lead and copper tap M/R:** A violation where a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

**Treatment installation:** Violations for a failure to install optimal corrosion control treatment system or source water treatment system which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in both categories].

**Lead service line replacement:** A violation for a system's failure to replace lead service lines on the schedule required by the regulation.

**Public education:** A violation where a system did not provide required public education about reducing or avoiding lead intake from water.

**Maximum Contaminant Level (MCL):** The highest amount of a contaminant that is allowed in drinking water. MCLs ensure that drinking water does not pose either a short or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

**Monitoring:** Regulations specify which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow this schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

**Organic Contaminants:** Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. Regulations set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

**Radionuclides:** Radioactive particles which can occur naturally in water or result from human activity. Regulations set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

**Gross alpha:** A violation for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

**Combined radium-226 and radium-228:** A violation for combined radiation from these two isotopes above MCL of 5 pCi/L.

**Gross beta:** A violation for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

**SDWIS Code:** Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

**Surface Water Treatment Rule (SWTR):** The SWTR establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

**Monitoring, routine/repeat (for filtered systems):** A violation for a system's failure to carry out required tests, or to report the results of those tests.

**Treatment techniques (for filtered systems):** A violation for a system's failure to properly treat its water.

**Monitoring, routine/repeat (for unfiltered systems):** A violation for a system's failure to carry out required water tests, or to report the results of those tests.

**Failure to filter (for unfiltered systems):** A violation for a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

**Total Coliform Rule (TCR):** The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

**Acute MCL violation:** A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

**Non-acute MCL violation:** A violation where the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

**Major routine and follow-up monitoring:** A violation where a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

**Sanitary Survey:** A major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

**Treatment Techniques:** A water disinfection process that is required instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

**Unfiltered Systems:** Systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

**Violation:** A failure to meet any state or federal drinking water regulation. Most violations require the water system to perform public notification to its consumers of said violation.

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**APPENDIX B**

**LIST OF PUBLIC WATER SUPPLY SYSTEMS**

**WITH MCL VIOLATIONS**

**JULY 2005**

**PWS SYSTEMS WITH TOTAL ORGANIC CARBON (TOC): 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	BLUE MOUND	KS2010701	276	BLUE MOUND	66010	1
2	CARBONDALE	KS2013914	1468	CARBONDALE	66414	1
3	COUNCIL GROVE	KS2012702	2315	COUNCIL GROVE	66846	1
4	EL DORADO	KS2001511	12669	EL DORADO	67042	4
5	ELLSWORTH CO. RWD #1	KS2005309	2626	ELLSWORTH	67439	1
6	GARDNER	KS2009106	12000	GARDENER	66030	1
7	HARVEYVILLE	KS2019704	254	HARVEYVILLE	66431	1
8	HERINGTON	KS2004102	2496	HERINGTON	67449	1
9	MADISON	KS2007301	845	MADISON	66866	1
10	MARION	KS2011507	2010	MARION	66861	1
11	MILFORD	KS2006109	482	MILFORD	67514	1
12	MITCHELL CO. RWD #2	KS2012304	1291	GLEN ELDER	67446	1
13	OSAGE CO. RWD #3	KS2013910	900	VASSAR	66543	1
14	PLEASANTON	KS2010704	1384	PLEASANTON	66075	1
15	PWWSD #12	KS2013919	7314	MELVERN	66510	1
16	RICHMOND	KS2005904	514	RICHMOND	66080	1
17	SEVERY	KS2007308	359	SEVERY	67137	1
18	THAYER	KS2013312	532	THAYER	66776	1
19	YATES CENTER	KS2020702	1599	YATES CENTER	66783	1

**TOTAL POPULATION AFFECTED:**

51334

TOTAL VIOLATIONS:

22

TOTAL PWS SYSTEMS:

19

**PWS SYSTEMS ISSUED BOIL WATER ADVISORY: 2004**

	PWS NAME	FED. #	POP.	LOCATION	ZIP	# VIO.
1	CARBONDALE	KS2013914	1468	CARBONDALE	66414	1
2	CHEROKEE CO. RWD #1	KS2002111	520	CRESTLINE	66728	1
3	CHEROKEE CO. RWD #4	KS2002102	100	SCAMMON	66773	1
4	COFFEE CO. RWD #3	KS2003106	1250	NEW STRAWN	66839	1
5	COLUMBUS	KS2002110	3301	COLUMBUS	66725	1
6	GREEN ACRES MHP	KS2011109	300	EMPORIA	66801	1
7	JO. CO. RWD #7	KS2009104	4537	GARDNER	66030	1
8	LACYGNE	KS2010703	1200	LACYGNE	66040	1
9	LINN CO. RWD #1	KS2010702	1145	LACYGNE	66040	1
10	LINN CO. RWD #3	KS2010708	798	LACYGNE	66040	1
11	LINN VALLEY LAKES	KS2010712	146	LINN VALLEY	66040	1
12	NICKERSON	KS2015505	1194	NICKERSON	67561	1
13	PARKER	KS2010706	280	PARKER	66072	1
14	POTWIN	KS2001518	443	POTWIN	67123	1
15	SHARON SPRINGS	KS2019903	799	SHARON SPRINGS	67758	1
16	TROY	KS2004304	1041	TROY	66087	1

**TOTAL POPULATION AFFECTED:** 18522  
**TOTAL VIOLATIONS:** 16  
**TOTAL PWS SYSTEMS:** 16

**PWS SYSTEMS WITH SURFACE WATER TREATMENT VIOLATIONS****MONITORING, ROUTINE/REPEAT: 2004**

	PWS NAME	FED. #	POP.	LOCATION	ZIP	# VIO.
1	CARBONDALE	KS2013914	1468	CARBONDALE	66414	1
2	ELLSWORTH CO. RWD #1	KS2005309	2626	ELLSWORTH	67439	5
3	FLORENCE	KS2011503	663	FLORENCE	66851	1
4	GRENOLA	KS2004904	231	GRENOLA	67346	3
5	LONGTON	KS2004903	378	LONGTON	67352	1

**TOTAL POPULATION AFFECTED:** 5366  
**TOTAL VIOLATIONS:** 11  
**TOTAL PWS SYSTEMS:** 5

**PWS SYSTEMS WITH SURFACE WATER TREATMENT****RES. DISINFECT CONCENTRATION, OR SINGLE COMB. FILTER****EFFL., OR MONTHLY COMB. FILTER EFFL.: 2004**

	PWS NAME	FED. #	POP.	LOCATION	ZIP	# VIO.
1	BELOIT	KS2012301	3869	BELOIT	67420	2
2	CARBONDALE	KS2013914	1468	CARBONDALE	66414	1
3	KCPL LACYGNE 1 & 2	KS2110701	335	LACYGNE	66040	3
4	LACYGNE	KS2010703	1200	LACYGNE	66040	1
5	SEDAN	KS2001903	1294	SEDAN	67361	2
6	SEVERY	KS2007308	359	SEVERY	67137	1

**TOTAL POPULATION AFFECTED:** 8525  
**TOTAL VIOLATIONS:** 10  
**TOTAL PWS SYSTEMS:** 6



**PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ARGONIA	KS2019116	516	ARGONIA	67004	3
2	ARLINGTON	KS2015511	446	ARLINGTON	67514	2
3	BREWSTER	KS2019303	285	BREWSTER	67732	1
4	CONWAY SPRINGS	KS2019118	1294	CONWAY SPRINGS	67031	1
5	GARDEN CITY	KS2005511	27678	GARDEN CITY	67846	1
6	GAYLORD	KS2018301	138	GAYLORD	67638	1
7	GRAINFIELD	KS2006302	321	GRAINFIELD	67737	2
8	GREENLEAF	KS2020106	347	GREENLEAF	66943	2
9	HARPER CO. RWD #4	KS2007708	320	FREEPORT	67049	3
10	INGALLS	KS2006902	338	INGALLS	67853	2
11	JEFFERSON CO. RWD #15	KS2008721	228	GRANTVILLE	66429	4
12	JEWELL CO. RWD #1	KS2008907	959	ESBON	66941	3
13	KIRWIN	KS2014702	249	KIRWIN	67644	1
14	MCDONALD	KS2015303	152	MCDONALD	67745	1
15	NORWICH	KS2009505	537	NORWICH	67118	2
16	OSBORNE CO. RWD #1A	KS2014103	81	OSBOURNE	67473	1
17	PLAINS	KS2011903	1151	PLAINS	67869	2
18	PRETTY PRAIRIE	KS2015501	601	PRETTY PRAIRIE	67570	3
19	ST. GEORGE	KS2014917	442	ST. GEORGE	66535	1
20	SUMNER CO. RWD #5	KS2019101	850	CONWAY SPRINGS	67031	1
21	VIOLA	KS2017313	215	VIOLA	67149	1

**TOTAL POPULATION AFFECTED:** 37148  
**TOTAL VIOLATIONS:** 38  
**TOTAL PWS SYSTEMS:** 21

**PWS SYSTEMS WITH NITRATE MONITORING VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	BOGUE	KS2006504	174	BOGUE	67625	1
2	COTTONWOOD FALLS	KS2001703	966	COTTONWOOD FALL	66845	1
3	COUNTRYSIDE RENTALS	KS2005512	60	GARDEN CITY	67846	1
4	COUNTRYVIEW MHP	KS2015520	54	HUTCHINSON	67502	1
5	HOXIE	KS2017901	1244	HOXIE	67740	1
6	INMAN	KS2011310	1231	INMAN	67546	1
7	MARQUETTE	KS2011302	593	MARQUETTE	67464	1
8	MORLAND	KS2006501	159	MORLAND	67650	1
9	MOUNT HOPE	KS2017319	839	MOUNT HOPE	67108	1
10	NORCATUR	KS2003902	166	NORCATUR	67653	1
11	REXFORD	KS2019304	157	REXFORD	67753	1
12	SHARON SPRINGS	KS2019903	799	SHARON SPRINGS	67758	2
13	STAGG HILL GOLF COURSE	KS2116114	25	MANHATTAN	66502	1

**TOTAL POPULATION AFFECTED:** 6467  
**TOTAL VIOLATIONS:** 14  
**TOTAL PWS SYSTEMS:** 13

**PWS SYSTEMS WITH NON-COMMUNITY NITRATE MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ST. JOSEPH SCHOOL	KS2115513	100	MT. HOPE	67031	1
2	TYSON MEATS	KS2105525	2900	HOLCOMB	67851	1

**TOTAL POPULATION AFFECTED:** 3000  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTEMS:** 2

**PWS SYSTEMS WITH ATRAZINE MCL VIOLATION: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	CANEY	KS2012517	2032	CANEY	67333	1

**TOTAL POPULATION AFFECTED:** 2032  
**TOTAL VIOLATIONS:** 1  
**TOTAL PWS SYSTEMS:** 1

**PWS SYSTEMS WITH ASBESTOS ROUTINE/MINOR MONITORING VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	CULVER	KS2014306	171	CULVER	67484	1
2	VIOLA	KS2017313	215	VIOLA	67149	1

**TOTAL POPULATION AFFECTED:** 386  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTES:** 2

**PWS SYSTEMS FAILED TO MONITOR FOR IOCs 2002 - 2004 COMPLIANCE PERIOD:**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ALL SEASONS MOBILE HOME COURT	KS2000912	150	GREAT BEND	67530	1
2	BOGUE, CITY OF	KS2006504	174	BOGUE	67625	1
3	COUNTRYSIDE RENTALS	KS2005512	60	GARDEN CITY	67846	1
4	COUNTRYVIEW MOBILE HOME PARK	KS2015520	54	HUTCHINSON	67502	1
5	ENGLEWOOD, CITY OF	KS2002503	107	ENGLEWOOD	67840	1
6	HOXIE, CITY OF	KS2017901	1244	HOXIE	67740	1
7	INMAN, CITY OF	KS2011310	1231	INMAN	67546	1
8	MARSHALL CO RWD 3	KS2011713	1900	BEATTIE	66406	1
9	OAKLEY, CITY OF	KS2010901	2173	OAKLEY	67748	1
10	ONAGA, CITY OF	KS2014905	697	ONAGA	66521	1
11	REXFORD, CITY OF	KS2019304	157	REXFORD	67753	1
12	SHARON SPRINGS, CITY OF	KS2019903	799	SHARON SPRINGS	67758	1
13	SOLOMON, CITY OF	KS2004105	1063	SOLOMON	67480	1
14	SUPREME CATTLE FEEDERS MOBILE HOME PARK	KS2017506	33	KISMET	67859	1
15	WALLACE CO RWD 1	KS2019901	200	WESKAN	67762	1

**TOTAL POPULATION AFFECTED:** 20,942

**TOTAL VIOLATIONS:** 15

**TOTAL PWS SYSTES:** 15

**PWS SYSTEMS WITH HAA5 MONITORING, ROUTINE(DBP)MINOR, OR FAILURE TO HAVE MONITOR PLAN, OR MONITORING WITH NO. MISSING SAMPLES, OR MONITORING ROUTINE MAJOR: 2004**

	<b>PWS NAME</b>	<b>FED #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	COUNTRYVIEW MHP	KS2015520	54	HUTCHINSON	67502	1
2	RUSSELL CO. RWD #1	KS2016707	64	RUSSELL	67665	1

**TOTAL POPULATION AFFECTED:** 118

**TOTAL VIOLATIONS:** 2

**TOTAL PWS SYSTEMS:** 2

**PWS SYSTEMS WITH HAA5 MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ALMA	KS2019701	762	ALMA	66401	2
2	BLUE MOUND	KS2010701	276	BLUE MOUND	66010	2
3	BURLINGTON	KS2003101	2795	BURLINGTON	66839	2
4	CANEY	KS2012517	2032	CANEY	67333	3
5	CARBONDALE	KS2013914	1468	CARBONDALE	66414	2
6	CHAUTAUQUA CO. RWD #3	KS2001909	135	SEDAN	67361	2
7	CHETOPA	KS2009905	1242	CHETOPA	67336	2
8	COFFEY CO RWD #2	KS2003102	900	GRIDLEY	66852	2
9	COUNCIL GROVE	KS2012702	2315	COUNCIL GROVE	66846	2
10	ELK CITY	KS2012520	305	ELK CITY	67341	1
11	ELLSWORTH CO. RWD #1	KS2005309	2626	ELLSWORTH	67439	1
12	ERIE	KS2013310	1683	ERIE	66733	3
13	FRANKLIN CO RWD #6	KS2005909	2400	RANTOUL	66079	2
14	FREDONIA	KS2020513	2547	FREDONIA	66736	2
15	GARDNER	KS2009106	12000	GARDNER	66030	1
16	GREENWOOD CO RWD#2	KS2007302	975	EUREKA	67045	2
17	HOWARD	KS2004901	815	HOWARD	67349	2
18	IOLA	KS2000103	6209	IOLA	66749	1
19	LACYGNE	KS2010703	1200	LACYGNE	66040	2
20	LINN CO. RWD #1	KS2010702	1145	LACYGNE	66040	1
21	LINN CO. RWD #2	KS2010707	1598	PLEASANTON	66075	3
22	LINN CO. RWD #3	KS2010708	798	LACYGNE	66040	2
23	LINN VALLEY LAKES POA	KS2010712	146	LINN VALLEY	66040	1
24	LONGTON	KS2004903	378	LONGTON	67352	1
25	LOUISBURG	KS2012106	2764	LOUISBURG	66053	1
26	MADISON	KS2007301	845	MADISON	66860	3
27	MARION	KS2011507	2010	MARION	66861	2
28	MOUND CITY	KS2010709	860	MOUND CITY	66056	2
29	OSAGE CO. RWD #3	KS2013910	900	VASSAR	66543	3
30	OSWEGO	KS2009908	1995	OSWEGO	67356	3
31	PERU	KS2001906	178	PERU	67360	1
32	PLEASANTON	KS2010704	1384	PLEASANTON	66075	3
33	RICHMOND	KS2005904	530	RICHMOND	66080	2
34	SEDAN	KS2001903	1294	SEDAN	67361	3
35	THAYER	KS2013312	532	THAYER	66776	3
36	VALLEY FALLS	KS2008710	1226	VALLEY FALLS	66088	2
37	WILSON CO RWD #10	KS2020510	630	CHANUTE	66720	3

TOTAL POPULATION AFFECTED:

61898

TOTAL VIOLATIONS:

75

TOTAL PWS SYSTEMS:

37

**PWS SYSTEMS WITH TOTAL TRIHALOMETHANES (TTHM) MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ALMA	KS2019701	762	ALMA	66401	1
2	ALTOONA	KS2020508	483	ALTOONA	66710	1
3	BAXTER SPRINGS	KS2002109	4407	BAXTER SPRINGS	66713	3
4	BELOIT	KS2012301	3869	BELOIT	67420	2
5	BLUE MOUND	KS2010701	276	BLUE MOUND	66010	2
6	BURLINGTON	KS2003101	2795	BURLINGTON	66839	2
7	CANEY	KS2012517	2032	CANEY	67333	3
8	CHAUTAUQUA CO. RWD #3	KS2001909	135	SEDAN	67361	1
9	CHETOPA	KS2009905	1242	CHETOPA	67336	2
10	COFFEY CO RWD #2	KS2003102	900	GRIDLEY	66852	2
11	COUNCIL GROVE	KS2012702	2315	COUNCIL GROVE	66846	1
12	ELLSWORTH CO RWD #1	KS2005309	2626	ELLSWORTH	67439	2
13	ERIE	KS2013310	1683	ERIE	66733	3
14	FORT LEAVENWORTH	KS2010311	8211	FT. LEAVENWORTH	66027	1
15	FRANKLIN CO RWD #6	KS2005909	2400	RANTOUL	66079	1
16	FREDONIA	KS2020513	2547	FREDONIA	66736	2
17	GARDNER	KS2009106	12000	GARDNER	66030	1
18	GREENWOOD CO RWD #2	KS2007302	972	EUREKA	67045	2
19	HARVEYVILLE	KS2019704	254	HARVEYVILLE	66431	1
20	HERINGTON	KS2004102	2496	HERINGTON	67449	1
21	HOWARD	KS2004901	815	HOWARD	67349	2
22	IOLA	KS2010703	6209	IOLA	66749	1
23	LACYGNE	KS2010703	1200	LACYGNE	66040	2
24	LINN CO. RWD #1	KS2010702	1145	LACYGNE	66040	1
25	LINN CO. RWD #2	KS2010707	1598	PLEASANTON	66075	3
26	LINN CO. RWD #3	KS2010708	798	LACYGNE	66040	1
27	LINN VALLEY LAKES POA	KS2010712	146	LINN VALLEY	66040	2
28	LONGTON	KS2004903	378	LONGTON	67352	1
29	MADISON	KS2007301	845	MADISON	66866	3
30	MARION	KS2011507	2010	MARION	66861	2
31	MITCHELL CO. RWD #2	KS2012304	1291	GLEN ELDER	67446	2
32	MITCHELL CO. RWD #3	KS2012309	2048	SCOTTSDALE	67420	2
33	MOUND CITY	KS2010709	860	MOUND CITY	66056	2
34	NEOSHO CO RWD #4A	KS2013319	975	GALESBURG	66740	1
35	NORTON	KS2013702	2956	NORTON	67654	3
36	OSAGE CO. RWD #3	KS2013910	900	VASSAR	66543	3
37	OSWEGO	KS2009908	1995	OSWEGO	67356	3
38	PEABODY	KS2011509	1359	PEABODY	66866	2
39	PERU	KS2001906	178	PERU	67360	1
40	PLEASANTON	KS2010704	1384	PLEASANTON	66075	3
41	RICHMOND	KS2005904	530	RICHMOND	66080	2
42	RUSSELL	KS2016703	4500	RUSSELL	67665	2
43	SEDAN	KS2001903	1294	SEDAN	67361	3
44	THAYER	KS2013312	532	THAYER	66776	1
45	TORONTO	KS2020701	301	TORONTO	66777	1
46	VALLEY FALLS	KS2008710	1226	VALLEY FALLS	66088	2
47	WILSON CO. RWD # 10	KS2020510	630	CHANUTE	66720	3
48	WOODSON CO RWD #1	KS2020703	1507	PIQUA	66761	2

<b>TOTAL POPULATION AFFECTED:</b>	92015
<b>TOTAL VIOLATIONS:</b>	90
<b>TOTAL PWS SYSTEMS:</b>	48

**PWS SYSTEMS WITH TTHM MONITORING, ROUTINE (DBP) MINOR, OR FAILURE TO HAVE MONITOR PLAN, OR MONITORING WITH NO. MISSING SAMPLES, OR MONITORING ROUTINE MAJOR: 2004**

	<b>PWS NAME</b>	<b>FED #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	COUNTRYVIEW MHP	KS2015520	54	HUTCHINSON	67502	1
2	RUSSELL CO. RWD #1	KS20156707	64	RUSSELL	67665	1

**TOTAL POPULATION AFFECTED:** 118  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTEMS:** 2

**PWS SYSTEMS WITH CARBON TETRACHLORIDE MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATIONS</b>	<b>ZIP</b>	<b># VIO.</b>
1	PRATT AIRPORT	KS2115101	40	PRATT	67124	2

**TOTAL POPULATION AFFECTED:** 40  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTEMS:** 1

**PWS SYSTEMS WITH TOTAL COLIFORM ACUTE MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ANDERSON CO. RWD #3	KS2000309	235	RICHMOND	66080	1
2	CHAUTAUQUA CO. RWD #2	KS2001908	400	MOLINE	67353	1
3	COLDWATER	KS2003304	800	COLDWATER	67029	1
4	HARPER CO. RWD #5	KS2007709	500	HARPER	67058	1
5	LEAVENWORTH CO. RWD #2	KS2010319	483	LEAVENWORTH	66048	1
6	OSAGE CO. RWD #5	KS2013904	3186	OVERBROOK	66524	1

**TOTAL POPULATION AFFECTED:** 5604  
**TOTAL VIOLATIONS:** 6  
**TOTAL PWS SYSTEMS:** 6

**PWS SYSTEMS WITH TOTAL COLIFORM MONTHLY MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ALLEN CO. RWD #10	KS2000109	125	CHANUTE	66720	1
2	ALLEN CO. RWD #11	KS2000123	54	IOLA	66749	1
3	ALLEN CO. RWD #13	KS2000118	150	CHANUTE	66720	1
4	ANDERSON CO. RWD #3	KS2000309	235	RICHMOND	66080	1
5	ATCHISON CO. RWD #4	KS2000501	310	LANCASTER	66041	1
6	CHAUTAUQUA CO. RWD #2	KS2001908	400	MOLINE	67353	1
7	COLDWATER	KS2003304	800	COLDWATER	67029	1
8	COMANCHE CO. RWD #2	KS2003303	125	COLDWATER	67029	2
9	DOUGLAS CO. RWD #4	KS2004509	3000	BALDWIN CITY	66006	1
10	EAST GARDEN MHC	KS2001508	38	ROSE HILL	67133	1
11	EL PASO WATER CO.	KS2017328	19500	DERBY	67037	1
12	ELK CO. RWD. #1	KS2004905	858	MOLINE	67353	1
13	ERIE	KS2013310	1683	ERIE	66733	1
14	FREE BREAKFAST INN	KS2119303	25	OAKLEY	67748	1
15	HARPER CO. RWD #5	KS2007709	500	HARPER	67058	1
16	INMAN	KS2011310	1231	INMAN	67456	1
17	JJ OIL CO.	KS2119302	25	OAKLEY	67748	1
18	LAKESIDE UN. METHODIST	KS2117106	25	SCOTT CITY	67871	1
19	LEAVENWORTH CO. RWD #2	KS2010319	483	LEAVENWORTH	66048	1
20	OKETO	KS2011704	90	OKETO	66518	1
21	OSAGE CO. RWD #5	KS2013904	3186	OVERBROOK	66524	1
22	OSAWATOMIE	KS2012105	4622	OSAWATOMIE	66064	1
23	OVERBROOK	KS2013903	972	OVERBROOK	66524	1
24	ROOKS CO. RWD #2	KS2016306	70	CODELL	67663	1
25	ROSELAND	KS2002105	98	ROSELAND	66773	1
26	SPEED	KS2014705	46	PHILLIPSBURG	67661	1
27	SUBURBAN WATER CO.	KS2010321	2800	BASEHOR	66007	1
28	VFW POST 8773	KS2106125	25	JUNCTION CITY	66441	2

<b>TOTAL POPULATION AFFECTED:</b>	41476
TOTAL VIOLATIONS:	30
TOTAL PWS SYSTEMS:	28

**PWS SYSTEMS WITH TOTAL COLIFORM MAJOR MONITORING VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ABBYVILLE	KS2015512	127	ABBYVILLE	67510	1
2	ALL SEASONS MHC	KS2000912	150	GREAT BEND	67530	3
3	ALMENA	KS2013701	466	ALMENA	67622	1
4	BARNARD	KS2010503	123	BARNARD	67418	3
5	BELPRE	KS2004701	101	BELPRE	67519	1
6	BEVERLY	KS2010504	198	BEVERLY	67423	1
7	BREWSTER	KS2019303	285	BREWSTER	67732	1
8	BUTLER CO. RWD #2	KS2001505	1160	EL DORADO	67042	1
9	CLAY CO. RWD #2	KS2002710	950	CLAY CENTER	67432	1
10	COLLYER	KS2019502	127	COLLYER	67631	1
11	COLONY	KS2000307	400	COLONY	66015	1
12	COUNTRY VIEW MHP	KS2005121	125	HAYS	67601	1
13	COUNTRYSIDE RENTALS	KS2005512	60	GARDEN CITY	67846	2
14	EASTON	KS2010301	373	EASTON	66020	2
15	EMMETT	KS2014901	280	EMMETT	66422	1
16	ERIE	KS2013310	1683	ERIE	66733	1
17	HEARTLAND COM. CHURCH	KS2110303	25	TONGANOXIE	66086	1
18	HUNTER	KS2012306	74	HUNTER	67452	1
19	HYZ INC HAI YING	KS2002122	25	GALENA	66739	2
20	JOHNSTON TRAILER CT	KS2006116	25	JUNCTION CITY	66441	1
21	KDOT COLBY EB 32512	KS2119308	25	TOPEKA	66603	1
22	KDOT COLBY WB 32511	KS2119307	25	TOPEKA	66603	1
23	LEAVENWORTH CO. #10	KS2010315	499	LINWOOD	66052	1
24	LEAVENWORTH CO #2	KS2010319	483	LEAVENWORTH	66048	1
25	LONG ISLAND	KS2014703	153	LONG ISLAND	67647	1
26	OSAGE CO. RWD #7	KS2013906	1430	OSAGE CITY	66523	2
27	READING	KS2011114	249	READING	66868	1
28	ROLLING HILLS LANDOWNERS	KS2017505	62	LIBERAL	67901	1
29	ROLLING MEADOWS MHC	KS2017321	131	MAIZE	67101	1
30	RUSSELL CO. RWD #1	KS2016707	64	RUSSELL	67665	1
31	RUSSELL CO. RWD #2	KS2016706	40	RUSSELL	67665	2
32	SANDBOX DAY CARE	KS2117336	100	WICHITA	67215	4
33	SHALLOW WATER SCHOOL	KS2117103	450	SCOTT CITY	67871	1
34	STUCKEY'S DQ 192	KS2106303	25	GRINNELL	67738	1
35	SUNNY ACRES MHC	KS2017337	75	WICHITA	67216	1
36	SUPPESVILLE GOLF COURSE	KS2119103	25	MILTON	67106	1
37	VIOLA	KS2017313	215	VIOLA	67149	1
38	WALLACE CO. RWD #1	KS2019901	200	WESKAN	67762	1
39	WALNUT GROVE MHC BRENS.	KS2014923	256	MANHATTAN	66502	1
40	WILSON CO. RWD #12	KS2020501	93	NEOSHA	66757	1

**TOTAL POPULATION AFFECTED:**

11357

**TOTAL VIOLATIONS:**

52

**TOTAL PWS SYSTEMS:**

40



**PWS SYSTEMS WITH TOTAL COLIFORM MINOR VIOLATIONS  
MONITORING AND REPORTING VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ABILENE	KS2004112	6438	ABILENE	67410	1
2	ALEXANDER	KS2016503	72	ALEXANDER	67513	1
3	ALLEN CO. RWD #3	KS2000113	32	IOLA	66749	1
4	ALL SEASONS MHC	KS2000912	150	GREAT BEND	67530	2
5	ALLEN CO. RWD #8	KS2000110	570	HUMBOLDT	66748	1
6	ALTOONA	KS2020508	483	ALTOONA	66710	1
7	ANDERSON CO. RWD #1	KS2000302	37	GARNETT	66032	1
8	ANDERSON CO. RWD #4	KS2000303	750	GARNETT	66032	1
9	ATCHISON CO. RWD #2	KS2000505	150	ATCHISON	66002	1
10	AURORA	KS2002906	77	AURORA	67417	1
11	B&B OVERNITE CAMP	KS2017501	25	LIBERAL	67901	1
12	BRONSON	KS2001106	343	BRONSON	66716	2
13	BUSHTON	KS2015905	302	BUSHTON	67427	1
14	CANTON	KS2011313	819	CANTON	67428	1
15	CHENEY ST. PK M&M PT	KS2115532	25	CHENEY	67025	1
16	CHEROKEE CO. RWD #1	KS2002111	520	CRESTLINE	66728	1
17	COLLYER	KS2019502	127	COLLYER	67631	1
18	CORBIN WATER ASSOC.	KS2019120	26	CALDWELL	67022	2
19	COTTONWOOD FALLS	KS2001703	966	COTTONWOOD FALLS	66845	1
20	DEDEE'S I70	KS2116111	25	MANHATTAN	66505	1
21	DONIPHAN CO. RWD #2	KS2004303	167	BENDENA	66008	1
22	DONIPHAN CO. RWD #3	KS2004301	437	SEVERANCE	66087	1
23	EAST GARDEN VILLAGE	KS2005543	3000	GARDEN CITY	67846	1
24	EASTON	KS2010301	373	EASTON	66020	1
25	EFFINGHAM	KS2000502	586	EFFINGHAM	66023	1
26	ELGIN	KS2001901	80	SEDAN	67361	2
27	EMMETT	KS2014901	280	EMMETT	66422	1
28	ENT, INC.	KS2104109	50	MANHATTAN	66505	1
29	FALL RIVER	KS2007304	156	FALL RIVER	67047	1
30	FORT LARNED PICNIC	KS2114503	25	LARNED	67550	1
31	GRENOLA	KS2004904	231	GRENOLA	67346	1
32	HAMILTON CO. RWD #1	KS2007503	93	KENDALL	67857	1
33	HAMILTON	KS2007303	334	HAMILTON	66853	3
34	HARPER CO. RWD #4	KS2007708	320	FREEPORT	67049	1
35	HARVEYVILLE	KS2019704	254	HARVEYVILLE	66431	1
36	HEARTLAND COM. CHURCH	KS2110303	25	TONGANOXIE	66086	2
37	HIGHLAND	KS2004306	940	HIGHLAND	66035	1
38	JIM'S CONVENIENCE CTR	KS2106124	25	MILFORD	66514	1
39	JOHNSTON TRAILER CT	KS2006116	25	JUNCTION CITY	66441	3
40	KS. BIBLE CAMP EAST	KS2115512	110	HUTCHINSON	67501	1
41	KCBPU	KS2020906	164462	KANSAS CITY	66104	1
42	KDOT INGALLS RA 63502	KS2106903	25	TOPEKA	66603	1
43	LEAVENWORTH CO RWD #1	KS2010316	90	LEAVENWORTH	66048	2
44	LEAVENWORTH CO. RWD #9	KS2010308	1302	TONGANOXIE	66086	1
45	LEAVENWORTH WATER DEPT	KS2010317	39471	LEAVENWORTH	66048	1
46	LENORA	KS2013705	305	LENORA	67645	1
47	LONGHORN STEAKHOUSE	KS2017346	65	WICHITA	67215	1
48	LOUISBURG	KS2012106	2764	LOUISBURG	66053	2
49	MADISON	KS2007301	845	MADISON	66860	1

50	MARION CO. IMP. DIST #2	KS2011512	500	MARION	66861	1
51	MEADOW VIEW ESTATES	KS2015515	70	HUTCHINSON	67501	1
52	MELVERN	KS2013905	435	MELVERN	66510	1
53	MIAMI CO. RWD #3	KS2012104	2237	OSAWATOMIE	66064	2
54	MILTONVALE	KS2002903	498	MILTONVALE	67466	1
55	MONTGOMERY CO. RWD #11	KS2012518	633	COFFEYVILLE	67337	1
56	MORNINGSTAR RANCH	KS2111513	35	FLORENCE	66851	1
57	OSBORNE CO. RWD #2	KS2014107	61	NATOMA	67651	1
58	PARADISE	KS2016708	62	PARADISE	67658	1
59	PARTRIDGE GRADE SCHOOL	KS2115515	100	HAVEN	67543	1
60	PLEASURES	KS2117346	200	WICHITA	67217	1
61	PRAIRIE SCHOONER MHC	KS2019112	80	MULVANE	67110	1
62	PRETTY PRAIRIE	KS2015501	601	PRETTY PRAIRIE	67570	1
63	PRINCETON	KS2005912	322	PRINCETON	66078	1
64	RICHMOND	KS2005904	530	RICHMOND	66080	1
65	RICK'S RESTAURANT	KS2115110	25	PRATT	67124	1
66	ROLLA	KS2012902	482	ROLLA	67954	1
67	SANDBOX DAYCARE	KS2117336	100	WICHITA	67215	1
68	SCOTT STATE PARK WS 1	KS2117101	25	SCOTT CITY	67871	1
69	SHALLOW WATER SCHOOL	KS2117103	450	SCOTT CITY	67871	3
70	SHAWNEE CO RWD #2C	KS2017713	432	TOPEKA	66618	1
71	ST. GEORGE	KS2014917	442	ST. GEORGE	66535	2
72	STAGG HILL GOLF COURSE	KS2116114	25	MANHATTAN	66502	3
73	STERLING	KS2015902	2591	STERLING	67579	1
74	STUCKEY'S DQ 192	KS2106303	25	GRINNELL	67738	3
75	SUNNY ACRES MHC	KS2017337	75	WICHITA	67216	1
76	SUPPESVILLE COASTAL	KS2119102	100	MILTON	67106	1
77	SUPPESVILLE GOLF COURSE	KS2119103	25	MILTON	67106	1
78	THUNDERBIRD MARINA	KS2106113	25	JUNCTION CITY	66441	1
79	TORONTO	KS2020701	301	TORONTO	66777	1
80	TURON	KS2015503	430	TURON	67583	1
81	US ARMY COE MILFORD ADM.	KS2106105	25	JUNCTION CITY	66441	1
82	US ARMY COE MILFORD OUTLET	KS2106108	25	JUNCTION CITY	66441	1
83	VIRGIL	KS2007307	113	VIRGIL	66870	1
84	WALTHERS OIL 15 36 TRUCKSTOP	KS2120103	25	CONCORDIA	66901	1
85	WEST MINERAL	KS2002115	238	WEST MINERAL	66782	1
86	WESTSIDE MHP	KS2005526	75	GARDEN CITY	67846	1
87	WINCHESTER	KS2008701	578	WINCHESTER	66097	1
88	YMCA CAMP HYDE INC	KS2117351	300	VIOLA	67149	4

**TOTAL POPULATION AFFECTED:**

242,073

**TOTAL VIOLATIONS:**

110

**TOTAL PWS SYSTEMS:**

88

**PWS SYSTEMS WITH TOTAL COLIFORM MAJOR MONITORING (REPEAT)****VIOLATIONS:2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ALLEN CO. RWD #11	KS2000123	54	IOLA	66749	1
2	SUNDOWNER WEST MHP	KS2016910	220	SALINA	67402	1
3	WALLACE CO. RWD #1	KS2019901	200	WESKAN	67762	1

**TOTAL POPULATION AFFECTED:** 474  
**TOTAL VIOLATIONS:** 3  
**TOTAL PWS SYSTEMS:** 3

**PWS SYSTEMS WITH GROSS ALPHA MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	COOLIDGE	KS2007501	87	COOLIDGE	67836	1
2	MORGANVILLE	KS2002705	196	MORGANVILLE	67468	1

**TOTAL POPULATION AFFECTED:** 283  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTEMS:** 2

**PWS SYSTEMS WITH COMBINED RADIUM (226,228) MCL VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	BURDETT	KS2014501	245	BURDETT	67523	1
2	COLLIDGE	KS2007501	87	COOLIDGE	67836	1

**TOTAL POPULATION AFFECTED:** 332  
**TOTAL VIOLATIONS:** 2  
**TOTAL PWS SYSTES:** 2

**PWS SYSTEMS WITH LEAD AND COPPER VIOLATIONS****FOLLOW-UP OR ROUTINE TAP M/R: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	EASTON	KS2010301	373	EASTON	66020	1
2	ROLLING HILLS LANDOWNERS ASS	KS2017505	62	LIBERAL	67901	1
3	THAYER	KS2013312	532	THAYER	66776	1
4	WEIR	KS2002114	825	WEIR	66781	1

**TOTAL POPULATION AFFECTED:** 1792  
**TOTAL VIOLATION:** 4  
**TOTAL PWS SYSTEMS:** 4

**PWS SYSTEMS WITH LEAD AND COPPER PUBLIC EDUCATION: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	CLAY CO. RWD #2	KS2002710	950	CLAY CENTER	67432	1

**TOTAL POPULATION AFFECTED:** 950  
**TOTAL VIOLATIONS:** 1  
**TOTAL PWS SYSTEMS:** 1

**PWS SYSTEMS WITH COPPER VIOLATIONS: 2004**

	PWS NAME	FED. #	POP.	LOCATION	ZIP	# VIO.
1	BROWN CO. RWD #2	KS2001312	724	POWHATTAN	66527	1
2	CONWAY SPRINGS	KS2019118	1294	CONWAY SPRINGS	67031	1
3	HOWISON HEIGHTS WATER DIST	KS2016909	87	SALINA	67401	1
4	KANOPOLIS	KS2018101	534	KANOPOLIS	67454	1
5	LEAVENWORTH CO. RWD #7	KS2010320	2614	BONNER SPRINGS	66012	1
6	MAIZE	KS2017345	1973	MAIZE	67031	1

TOTAL POPULATION AFFECTED: 7226

TOTAL VIOLATION: 6

TOTAL PWS SYSTEMS: 6

**PWS SYSTEMS WITH LEAD VIOLATIONS: 2004**

	PWS NAME	FED. #	POP.	LOCATION	ZIP	# VIO.
1	RICE CO. RWD #1	KS2015908	900	LITTLE RIVER	67457	1

TOTAL POPULATION AFFECTED: 900

TOTAL VIOLATION: 1

TOTAL PWS SYSTEMS: 1

**PWS SYSTEMS WITH MAJOR CONSUMER CONFIDENCE REPORT (CCR) VIOLATIONS: 2004**

	<b>PWS NAME</b>	<b>FED. #</b>	<b>POP.</b>	<b>LOCATION</b>	<b>ZIP</b>	<b># VIO.</b>
1	ABBYVILLE	KS2015512	127	ABBYVILLE	67510	1
2	ALEXANDER	KS2016503	72	ALEXANDER	67513	1
3	ALLEN CO. RWD #6	KS2000107	45	IOLA	66749	1
4	ARCADIA	KS2003711	295	ARCADIA	66711	1
5	ARMA	KS2003713	1501	ARMA	66712	1
6	ATLANTA	KS2003502	256	ATLANTA	67008	1
7	BARBER CO. RWD #2	KS2000704	500	KIOWA	67070	1
8	BARNES	KS2020110	148	BARNES	66933	1
9	BARTLETT	KS2009902	122	BARTLETT	67332	1
10	BARTON CO. RWD #1	KS2000902	30	HOISINGTON	67544	1
11	BAXTER SPRINGS	KS2002109	4407	BAXTER SPRINGS	66713	1
12	BED ROCK MHP	KS2006707	340	ULYSSES	67880	1
13	BOURBON CO. RWD #4	KS2001101	465	BRONSON	66716	1
14	BROOKVILLE	KS2016904	256	BROOKVILLE	67425	1
15	CHAUTAUQUA	KS2001907	109	CHAUTAUQUA	67334	1
16	CHEROKEE	KS2003714	716	CHEROKEE	66724	1
17	<b>CHEROKEE CO. RWD #9*</b>	KS2002120	913	RIVERTON	66770	1
18	CLEARWATER	KS2017329	2203	CLEARWATER	67026	1
19	CORINING	KS2013107	166	CORNING	66417	1
20	COWLEY CO. RWD #5	KS2003508	1356	BURDEN	67019	1
21	COWLEY CO. RWD #7	KS2003516	30	WINFIELD	67156	1
22	CRAWFORD CO. RWD #2	KS2003717	870	ARMA	66712	1
23	CRAWFORD CO. RWD #7	KS2003722	497	FRANKLIN	66735	1
24	CULLISON	KS2015104	96	CULLISON	67124	1
25	CULVER	KS2016305	171	CULVER	67484	1
26	DAMAR	KS2016305	151	DAMAR	67632	1
27	<b>ELGIN*</b>	KS2001901	80	SEDAN	67361	1
28	ELLIS CO. RWD #6	KS2005122	250	HAYS	67601	1
29	ELLSWORTH CO. RWD #1	KS2005309	2626	ELLSWORTH	67439	1
30	ELMDALE	KS2001704	48	ELMDALE	66850	1
31	FALL RIVER	KS2007304	156	FALL RIVER	67047	1
32	FORT RILEY	KS2006114	18000	FORT RILEY	66442	1
33	FRONTENAC	KS2003720	3064	FRONTENAC	66763	1
34	FULTON	KS2001102	182	FULTON	66738	1
35	GIRARD	KS2003718	2733	GIRARD	66743	1
36	GORHAM	KS2016713	359	GORHAM	67640	1
37	GOVE	KS2006303	102	GOVE	67736	1
38	HOLTON	KS2008503	3302	HOLTON	66436	1
39	HOWISON HEIGHTS	KS2016909	87	SALINA	67401	1
40	HUNTER	KS2012306	74	HUNTER	67452	1
41	IUKA	KS2015107	185	IUKA	67066	1
42	LABETTE CO. RWD #4	KS2009909	120	OSWEGO	67356	1
43	<b>LABETTE CO. RWD #5*</b>	KS2009906	1075	OSWEGO	67356	1
44	LINN CO. RWD #3	KS2010708	798	LACYGNE	66040	1
45	MCCONNELL AFB	KS2017323	4150	MCCONNELL AFB	67221	1
46	MITCHELL CO. RWD #1	KS2012302	345	BELOIT	67420	1
47	MONTGOMERY CO. RWD #7	KS2012516	380	COFFEYVILLE	67337	1
48	MONTGOMERY CO. RWD #9	KS2012519	418	ELK CITY	67344	1
49	<b>MORLAND*</b>	KS2006501	159	MORLAND	67650	1
50	NEMAHA CO. RWD #2	KS2013109	300	BAILEYVILLE	66404	1

51	NEOSHO CO. RWD #5	KS2013311	112	THAYER	66776	1
52	NORWICH	KS2009505	537	NORWICH	67118	1
53	O'CONNELL YOUTH RANCH	KS2004514	26	LAWRENCE	66046	1
54	OFFERLE	KS2004704	215	OFFERLE	67563	1
55	OSAGE CO. RWD #8	KS2013918	2240	BURLINGAME	66413	1
56	PAWNEE ROCK	KS2000916	348	PAWNEE ROCK	67567	1
57	RANDALL	KS2008901	81	RANDALL	66963	1
58	RAYMOND	KS2015901	93	RAYMOND	67573	1
59	RICE CO. RWD #1	KS2015908	900	LITTLE RIVER	67457	1
60	RILEY	KS2016124	870	RILEY	66531	1
61	ROLLING MEADOWS MHC	KS2017321	131	MAIZE	67101	1
62	ROOKS CO. RWD #2	KS2016306	70	CODELL	67663	1
63	RUSSELL CO. RWD #4	KS2016705	90	GORHAM	67640	1
64	SCAMMON	KS2002101	502	SCAMMON	66773	1
65	SCRANTON	KS2013911	724	SCRANTON	66537	1
66	SHWNEE CO. RWD #9	KS2017706	130	AUBURN	66402	1
67	SOUTHWIND SUBDIV.	KS2005527	789	GARDEN CITY	67846	1
68	<b>SPIVEY*</b>	KS2009504	79	SPIVEY	67142	1
69	TUTTLE CREEK WATER CO	KS2016117	81	MANHATTAN	66502	1
70	UNIVERSITY OF KANSAS	KS2004513	35000	LAWRENCE	66045	1
71	WAKEENEY	KS2019501	1850	WAKEENEY	67672	1
72	WEST HILLS SUBDIV.	KS2015519	60	NICKERSON	67561	1
73	WILSON CO. RWD #10	KS2020510	630	CHANUTE	66720	1
74	WILSON CO. RWD #2	KS2020514	200	FREDONIA	60736	1
75	WILSON CO. RWD #7	KS2020516	390	FREDONIA	66736	1
76	YATES CENTER	KS2020702	1599	YATES CENTER	66783	1

**TOTAL POPULATION AFFECTED:** 102582  
**TOTAL VIOLATIONS:** 76  
**TOTAL PWS SYSTEMS:** 76

**\*NAMES IN BOLD ARE STILL OUTSTANDING ANNUAL REPORTS**

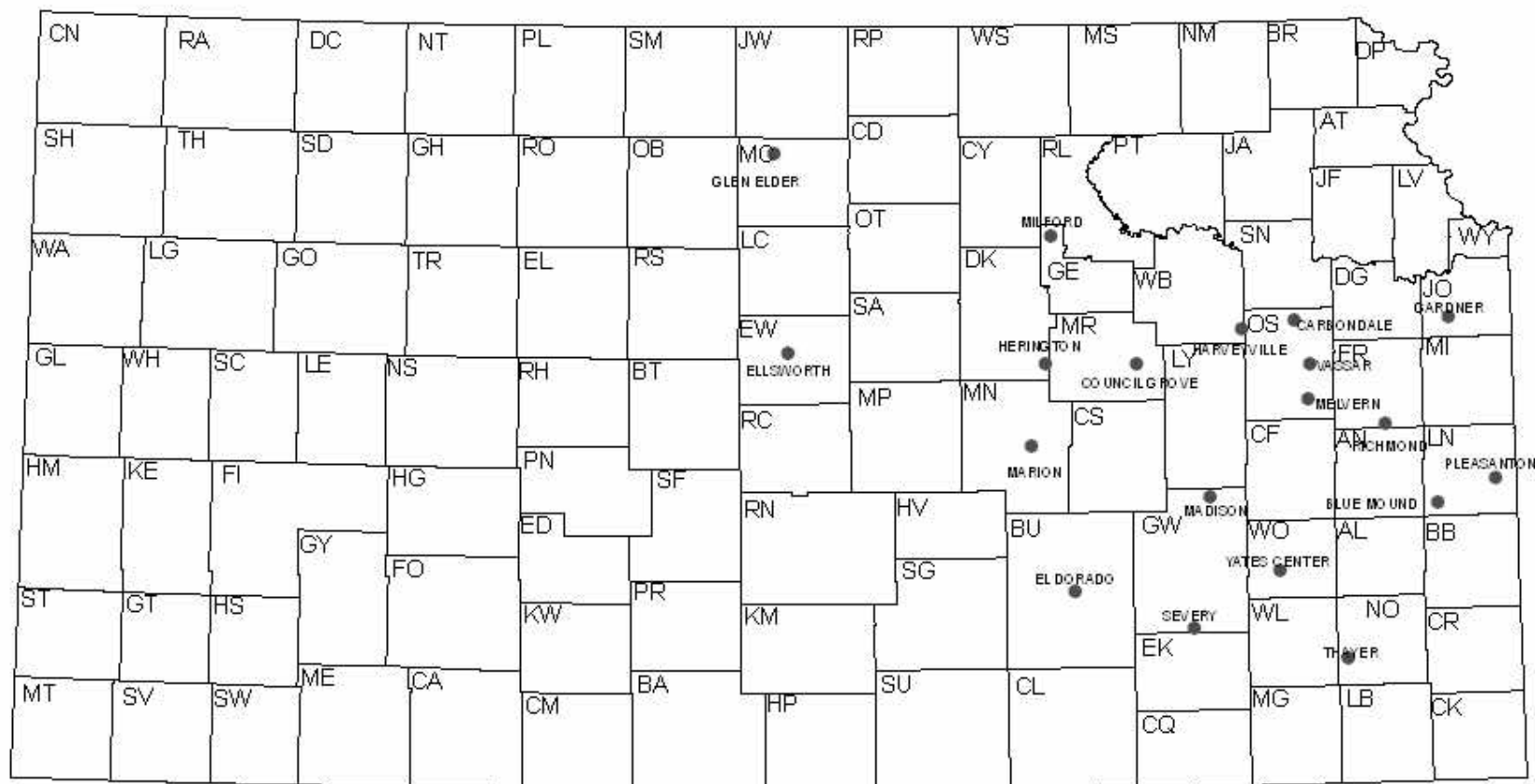
**APPENDIX C**

**MAPS OF CONTAMINANTS**

**WITH VIOLATIONS**

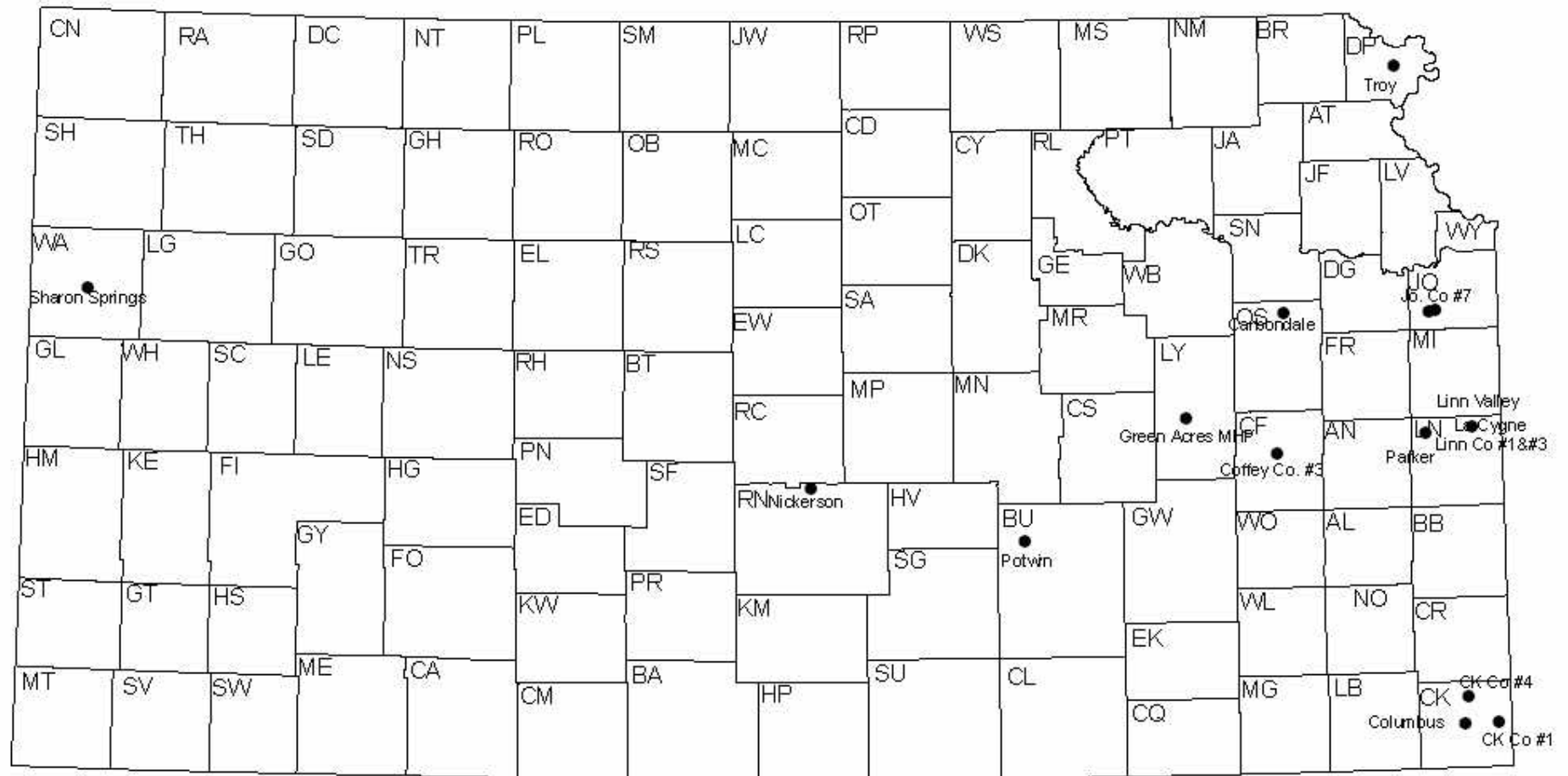
**JULY 2005**

# TOTAL ORGANIC COMPOUNDS (TOC) TREATMENT TECHNIQUE VIOLATIONS 2004

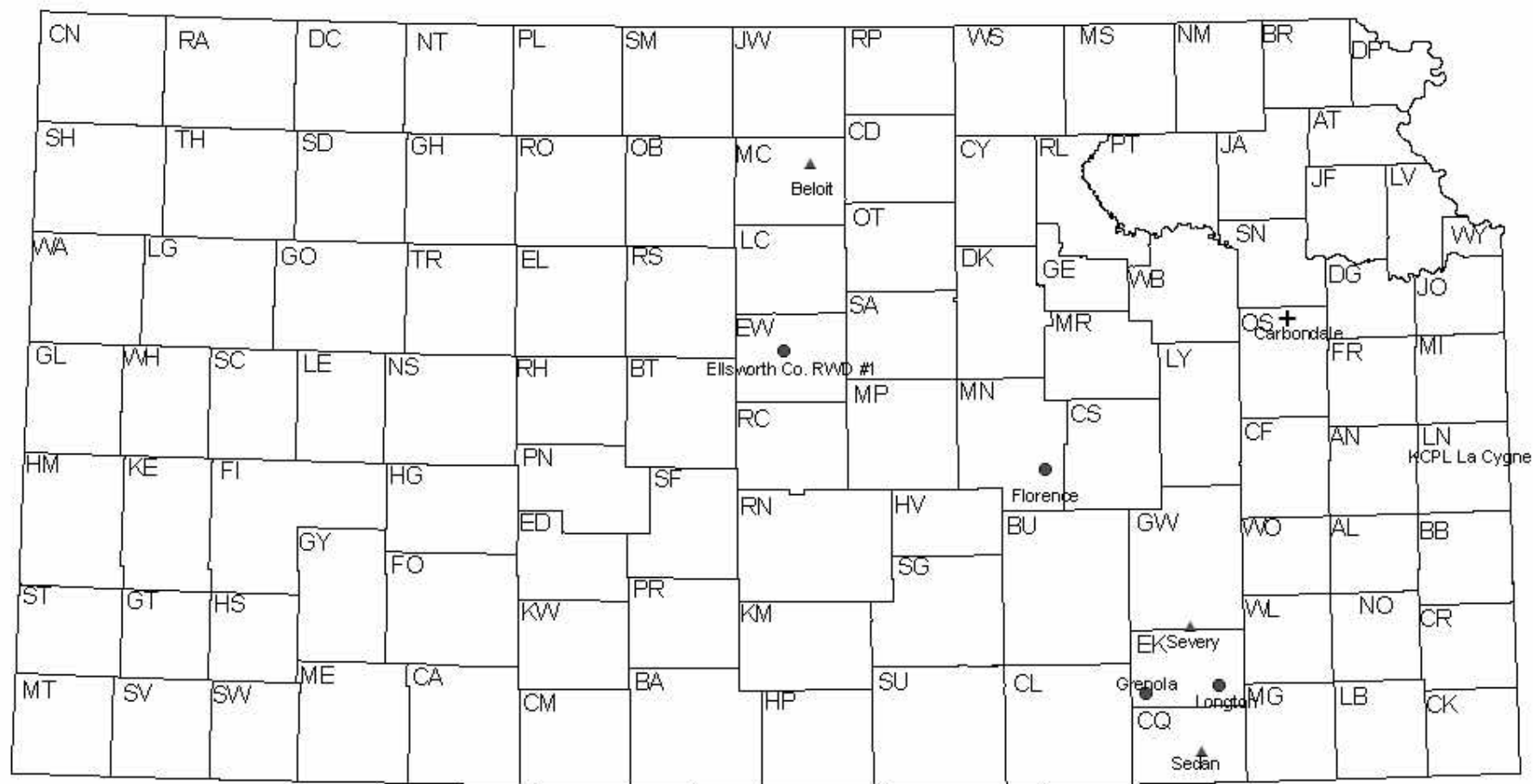




## BOIL WATER ADVISORY 2004



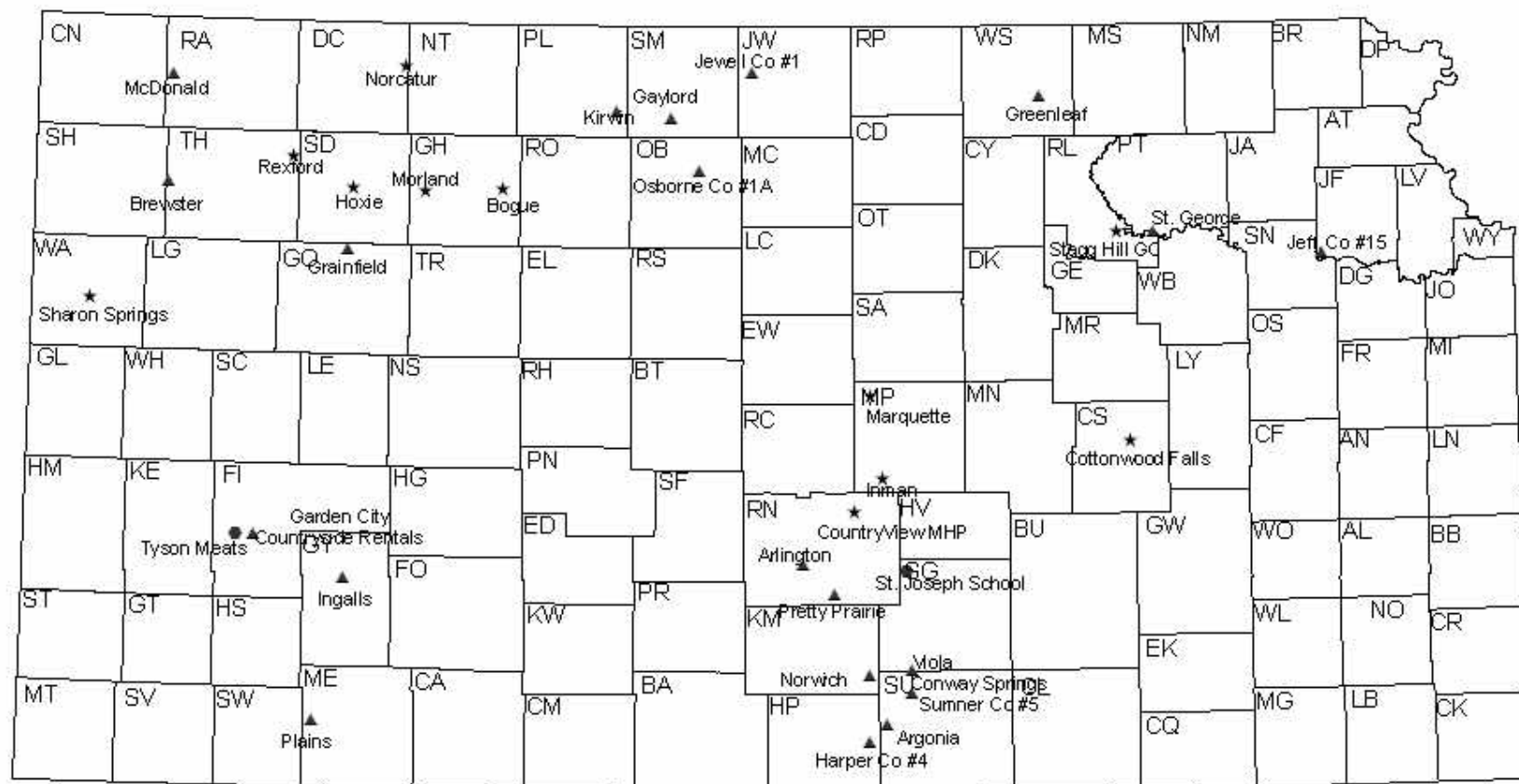
**SURFACE WATER TREATMENT MONITORING,  
ROUTINE/REPEAT, SINGLE OR MONTHLY  
COMBINATION FILTER ONLY 2004**



- ▲ Combined Filter Only
- Routine/Repeat
- + Combined/Routine



## NITRATE MCL AND MONITORING VIOLATIONS 2004

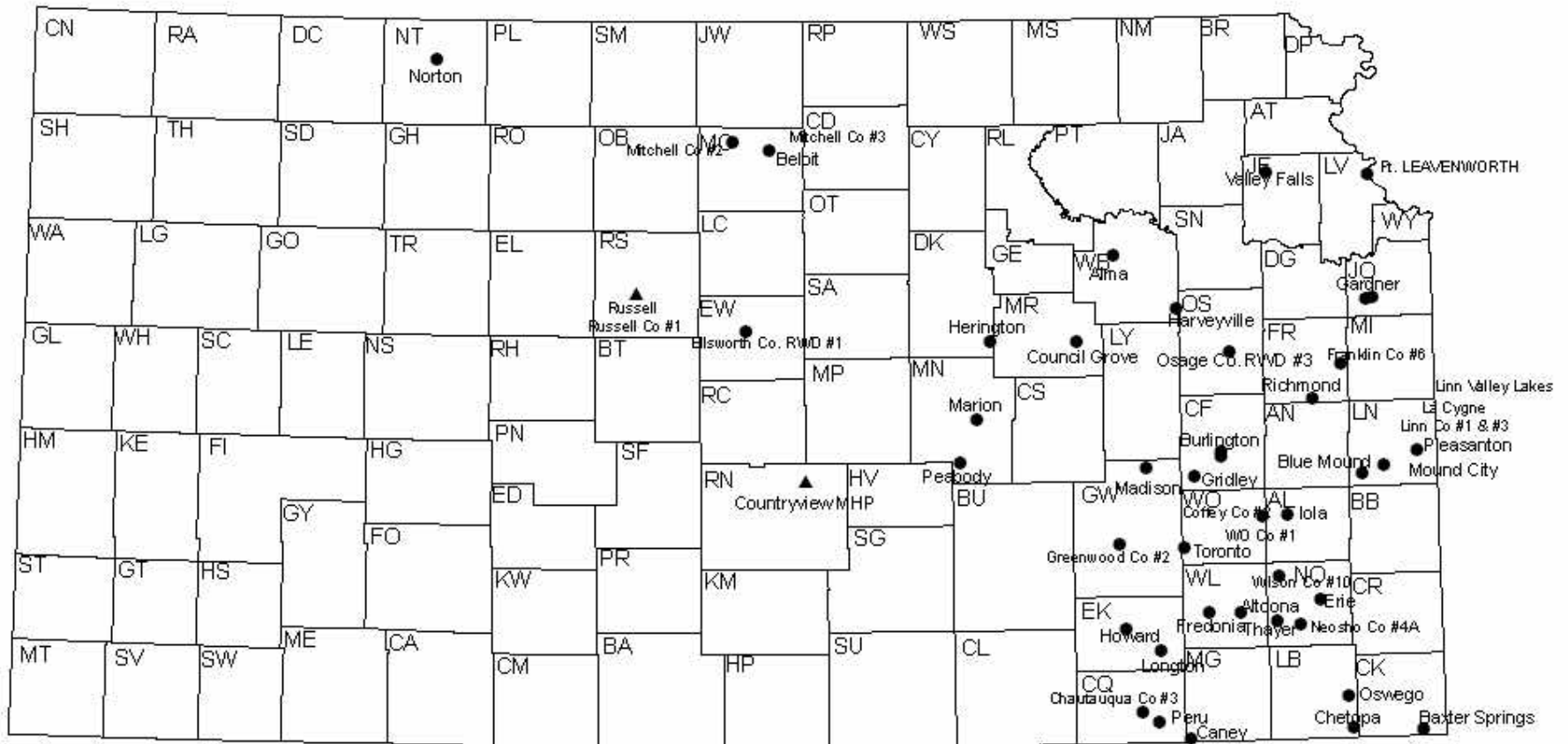


## Nitrate

- ▲ MCL Vio
- NonCommunity Vio
- ★ Mon. Vio



## TOTAL TRIHALOMETHANES MCL VIOLATIONS 2004

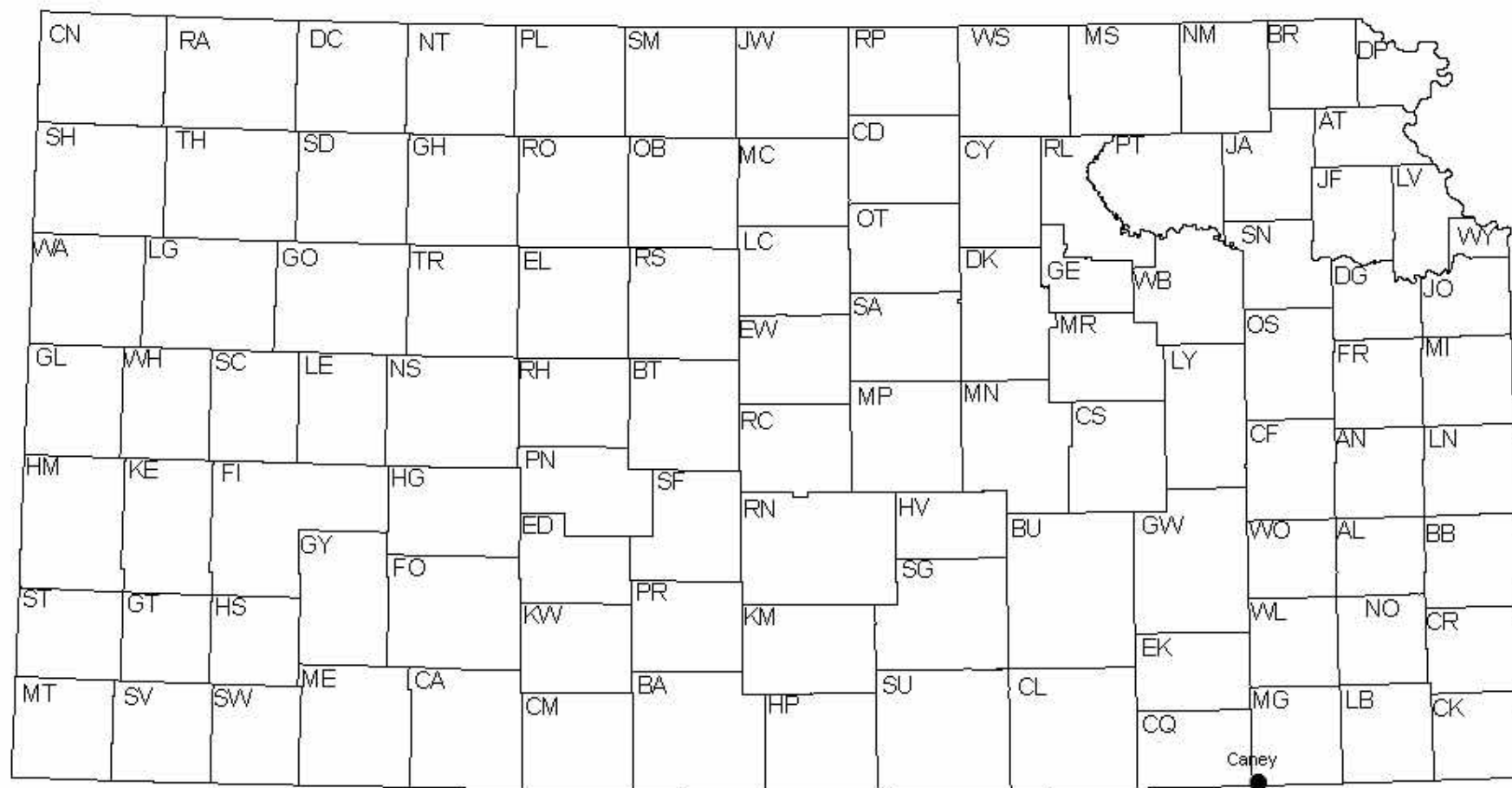


### TTHM

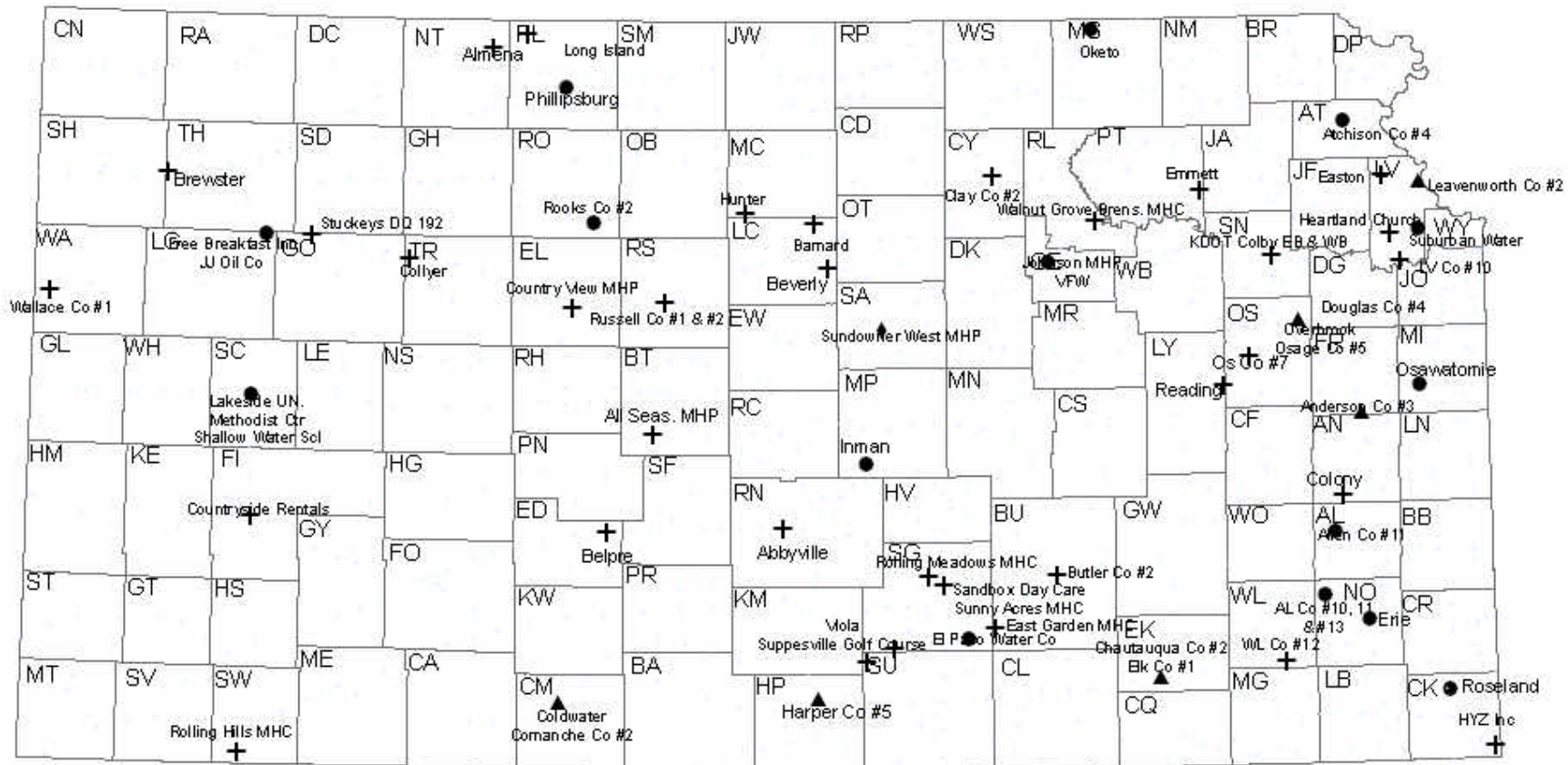
- TTHM MCL VIO
- ▲ TTHM MON ROUTINE



## ATRAZINE MCL VIOLATION 2004



## TOTAL COLIFORM MCL VIOLATIONS 2004

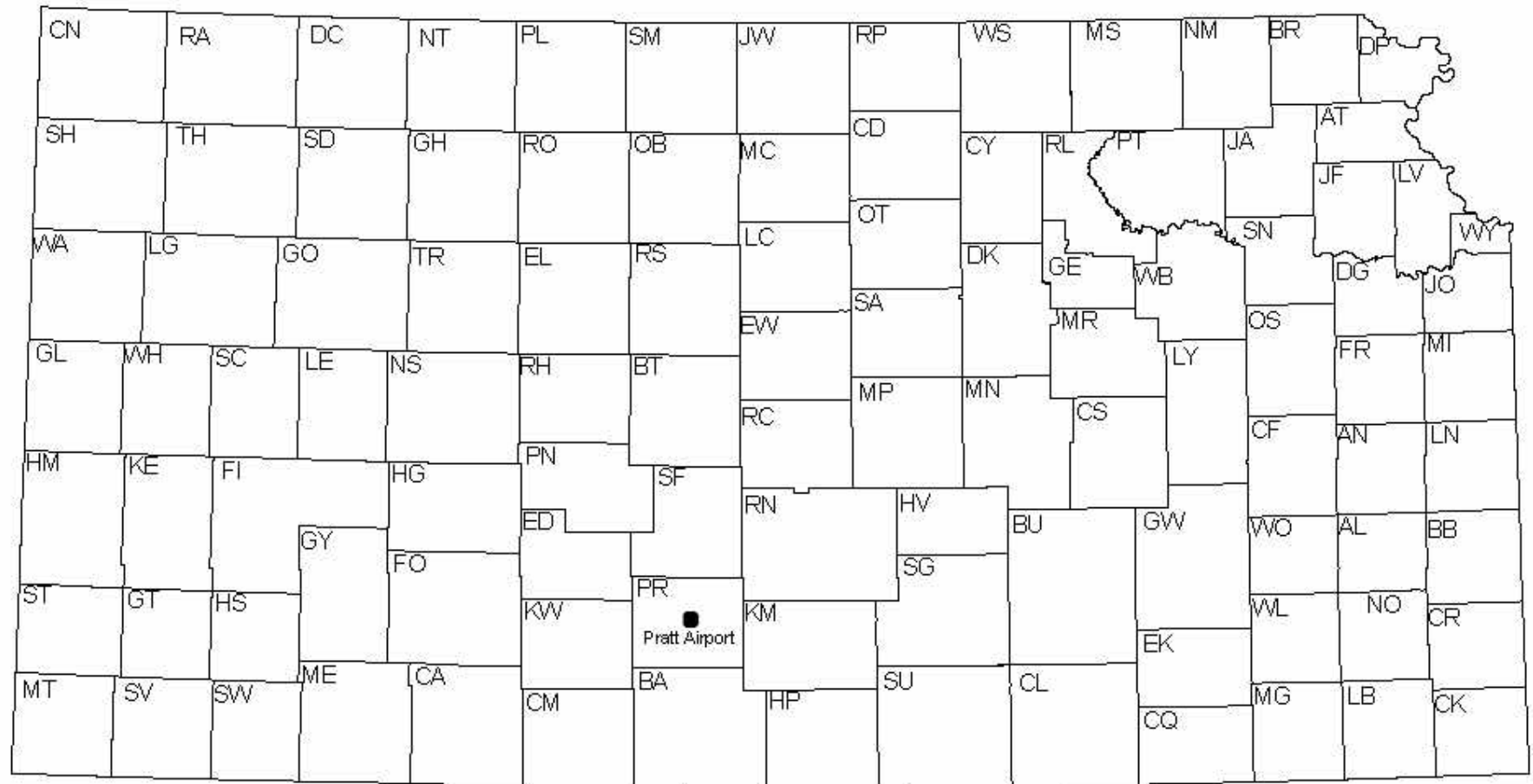


**TCR**

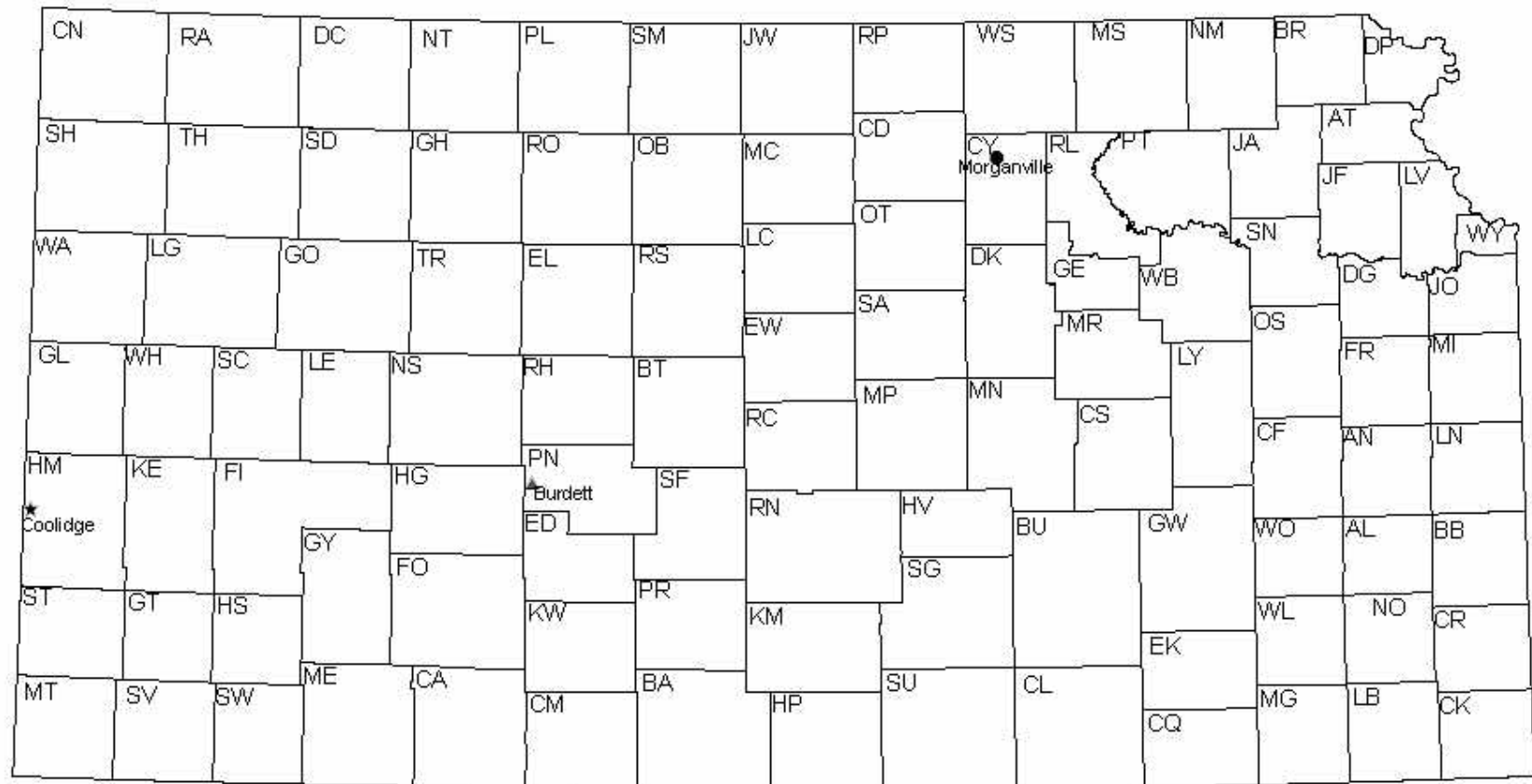
- ▲ Acute TCR Vio.
- + Major Mon. Vio.
- ◆ Major Repeat Vio.
- Monthly TCR Vio.



## CARBON TETRACHLORIDE MCL VIOLATION 2004



## TOTAL RADIONUCLIDES MCL VIOLATION 2004



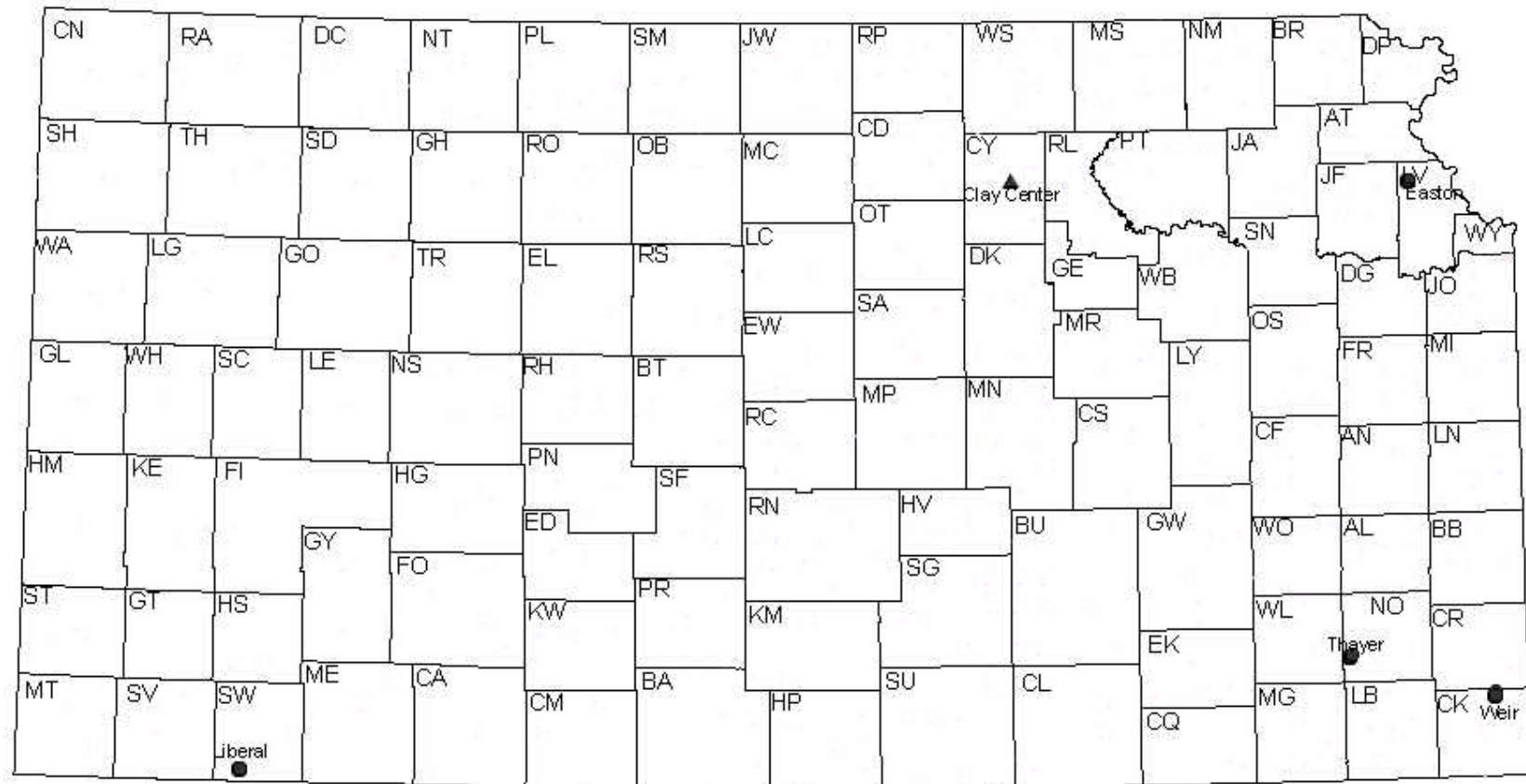
### Radionuclides

- ▲ Combined Radium 226, 228
- T. Radionuclide
- ★ Combined Rad, 226, 228





## LEAD AND COPPER VIOLATIONS 2004

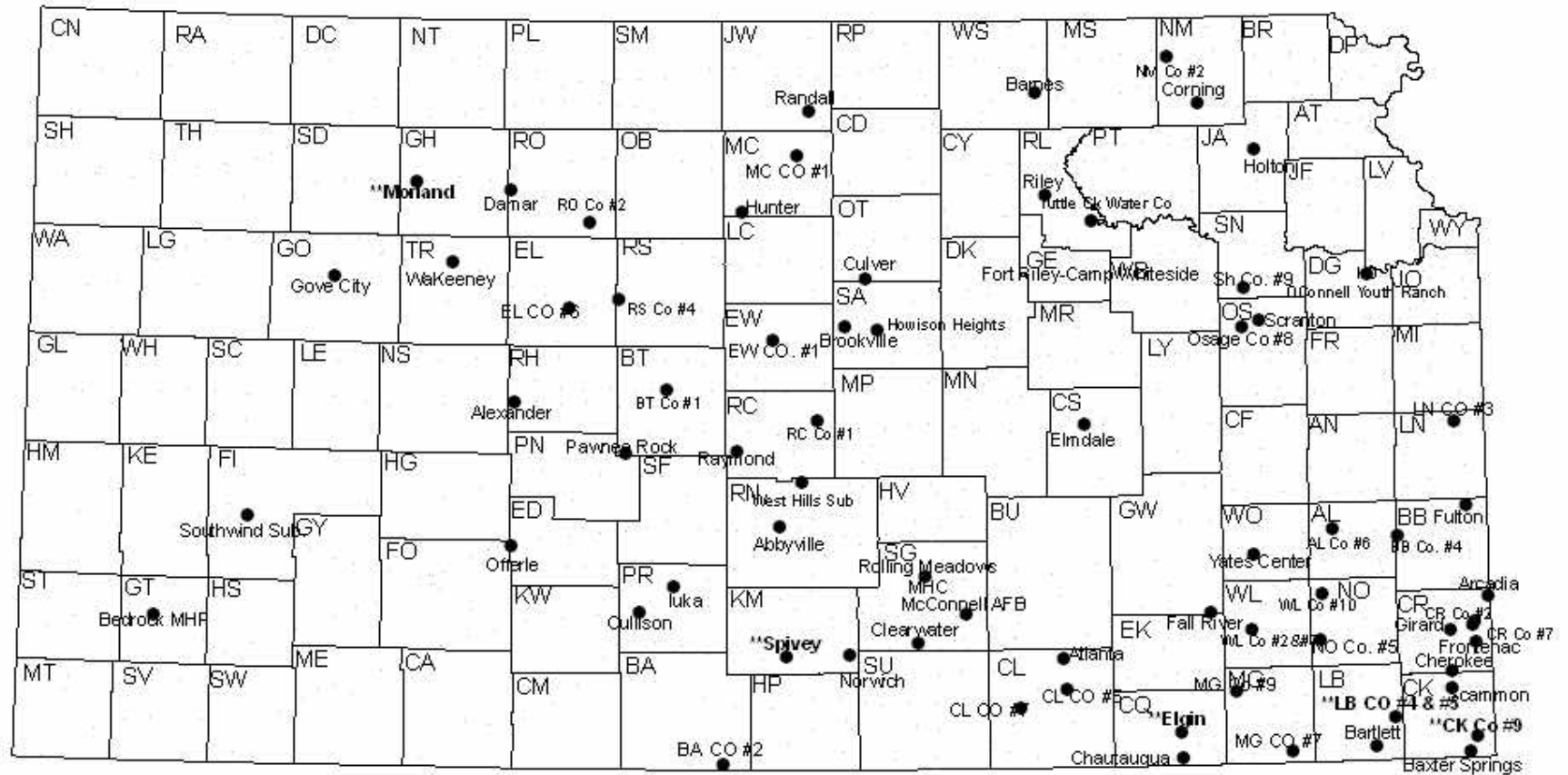


### Lead and Copper

- Lead & Copper Vio
- ▲ Lead Copper Pub. Education



# CONSUMER CONFIDENCE REPORT VIOLATIONS 2004



\*\*OUTSTANDING ANNUAL REPORTS



**APPENDIX D**

**LIST OF KDHE CONTACTS**

**FOR ADDITIONAL INFORMATION**

**JULY 2005**

KDHE – BUREAU OF WATER  
PUBLIC WATER SUPPLY  
1000 SW JACKSON – SUITE 420  
TOPEKA, KANSAS 66612-1367

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Capacity Development CATHY TUCKER-VOGEL.....	(785) 368-7130
Engineering and Permits, Unit Chief DAN CLAIR.....	(785) 296-5516
Engineering Plan Review REX COX.....	(785) 296-5539
Engineering Plan Review PAUL BODNER.....	(785) 368-8337
Engineering Plan Review MARIAN MASSOTH.....	(785) 296-0051
Engineering Plan Review and Permits DONALD SHEA.....	(785) 296-5797
Compliance and Data Management Unit Chief DARREL PLUMMER.....	(785) 296-5523
Monitoring and Compliance Coordinator, Surface Water Treatment JONATHAN HAYNES.....	785) 296-0643
Enforcement and Regulation Development KELLY KELSEY.....	(785) 296-6297

Regulation Development	
STEVE FROST.....	(785) 296-5505
Consumer Confidence Report, Annual Compliance Report	
PATTI CROY.....	(785) 296-3016
Bacteriological	
JEAN HERROLD.....	(785) 296-5518
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RON CRAMER.....	(785) 296-5946
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ELLAN SPIVEY.....	(785) 296-6434
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LINDA WHITE.....	(785) 296-5514
Operator Certification	
VICKIE JO WESSEL.....	(785) 296-2976
Source Water Assessment	
ROB BEILFUSS.....	(785) 296-5535
Kansas PWS Loan Fund	
WILLIAM CARR.....	(785) 296-0735